



DEPARTMENT OF ENERGY

10 CFR Parts 429 and 430

[EERE-2022-BT-TP-0024]

RIN 1904-AF35

Energy Conservation Program: Test Procedure for Portable Electric Spas

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Notice of proposed rulemaking and request for comment.

SUMMARY: The U.S. Department of Energy (“DOE”) proposes to establish definitions, a test procedure, and sampling requirements for portable electric spas.

Currently, portable electric spas are not subject to DOE test procedures or energy conservation standards. The proposed test method references the relevant industry test standard. DOE is seeking comment from interested parties on the proposals within the notice of proposed rulemaking (“NOPR”).

DATES: DOE will accept comments, data, and information regarding this proposal no later than [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. See section V, “Public Participation,” for details.

DOE will hold a webinar on Thursday, November 17, 2022, from 1:00 p.m. to 4:00 p.m. See section V, “Public Participation,” for webinar registration information, participant instructions, and information about the capabilities available to webinar participants.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at www.regulations.gov under docket number EERE-2022-BT-TP-0024. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2022-BT-TP-0024, by any of the following methods:

Email: PortableElecSpas2022TP0024@ee.doe.gov. Include the docket number EERE-2022-BT-TP-0024 in the subject line of the message.

Postal Mail: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-1445. If possible, please submit all items on a compact disc (“CD”), in which case it is not necessary to include printed copies.

Hand Delivery/Courier: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L’Enfant Plaza, SW., 6th Floor, Washington, DC, 20024. Telephone: (202) 287-1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimiles (“faxes”) will be accepted. For detailed instructions on submitting comments and additional information on this process, see section V of this document.

Docket: The docket for this activity, which includes *Federal Register* notices, public meeting attendee lists and transcripts (if a public meeting is held), comments, and other supporting documents/materials, is available for review at www.regulations.gov. All documents in the docket are listed in the www.regulations.gov index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

The docket web page can be found at www.regulations.gov/docket/EERE-2022-BT-TP-0024. The docket web page contains instructions on how to access all documents, including public comments, in the docket. See section V for information on how to submit comments through www.regulations.gov.

FOR FURTHER INFORMATION CONTACT:

Mr. Jeremy Domm, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-2J, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-9870. Email ApplianceStandardsQuestions@ee.doe.gov.

Ms. Kristin Koernig, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-3593. Email: Kristin.koernig@hq.doe.gov.

For further information on how to submit a comment, review other public comments and the docket, or participate in a public meeting (if one is held), contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by email: ApplianceStandardsQuestions@ee.doe.gov.

SUPPLEMENTARY INFORMATION:

DOE proposes to incorporate by reference the following industry standard into 10 CFR part 430:

ANSI/APSP/ICC-14 2019 “American National Standard for Portable Electric Spa Energy Efficiency”; approved November 19, 2019.

Copies of ANSI/APSP/ICC-14 2019 can be obtained from the Pool & Hot Tub Alliance, 2111 Eisenhower Avenue, Suite 500, Alexandria, VA 22314, or by going to www.phta.org.

See section IV.M of this document for a further discussion of this standard.

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I. Authority and Background

Portable electric spas are factory-built hot tubs or spas that are intended for the immersion of people in heated, temperature-controlled water that is circulated in a closed system. Currently, portable electric spas are not subject to DOE test procedures or energy conservation standards.

On September 2, 2022, DOE published a final determination (“September 2022 Final Determination”) in which it determined that portable electric spas qualify as a “covered product” under the Energy Policy and Conservation Act, as amended (“EPCA”) ¹. 87 FR 54123. In the September 2022 Final Determination, DOE determined that coverage of portable electric spas is necessary or appropriate to carry out the purposes of EPCA, and that the average U.S. household energy use for portable electric spas is likely to exceed 100 kilowatt-hours (“kWh”) per year. *Id.* at 87 FR 54127.

Accordingly, portable electric spas are now included in the list of “covered products” for which DOE is authorized to establish and amend energy conservation standards and test procedures. (42 U.S.C. 6292(a)(20))

The following sections discuss DOE’s authority to establish a test procedure for portable electric spas and relevant background information regarding DOE’s consideration of test procedures for this product.

¹ All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116-260 (Dec. 27, 2020), which reflect the last statutory amendments that impact Parts A and A-1 of EPCA.

A. Authority

EPCA authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B² of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, which sets forth a variety of provisions designed to improve energy efficiency for certain products, referred to as “covered products.”³ In addition to specifying a list of consumer products that are covered products, EPCA contains provisions that enable the Secretary of Energy to classify additional types of consumer products as covered products. To classify a consumer product as a covered product, the Secretary must determine that classifying the consumer product as a covered product is necessary or appropriate to carry out the purpose of EPCA and the average annual per household⁴ use by such a product is likely to exceed 100 kWh per year. (42 U.S.C. 6292(b)(1))

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6291), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

The Federal testing requirements consist of test procedures that manufacturers of covered products must use as the basis for: (1) certifying to DOE that their products comply with the applicable energy conservation standards adopted pursuant to EPCA (42

² For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

³ The enumerated list of covered products is at 42 U.S.C. 6292(a)(1)–(19).

⁴ The definition for “household” is found at 10 CFR 430.2.

U.S.C. 6295(s)), and (2) making other representations about the efficiency of those consumer products (42 U.S.C. 6293(c)). Similarly, DOE must use these test procedures to determine whether the products comply with relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions of EPCA. (42 U.S.C. 6297(d))

Under 42 U.S.C. 6293, EPCA sets forth the criteria and procedures DOE must follow when prescribing or amending test procedures for covered products. Specifically, EPCA provides that DOE may, in accordance with certain requirements, prescribe test procedures for any consumer product classified as a covered product under section 6292(b). (42 U.S.C. 6293(b)(1)(B)) EPCA requires that any test procedures prescribed or amended under this section shall be reasonably designed to produce test results which measure energy efficiency, energy use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use and not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

In addition, EPCA requires that DOE amend its test procedures for all covered products to integrate measures of standby mode and off mode energy consumption. (42 U.S.C. 6295(gg)(2)(A)) Standby mode and off mode energy consumption must be incorporated into the overall energy efficiency, energy consumption, or other energy descriptor for each covered product unless the current test procedures already account for

and incorporate standby and off mode energy consumption or such integration is technically infeasible. (42 U.S.C. 6295(gg)(2)(A)(i)-(ii)) If an integrated test procedure is technically infeasible, DOE must prescribe a separate standby mode and off mode energy use test procedure for the covered product, if technically feasible. (42 U.S.C. 6295(gg)(2)(A)(ii)) Any such amendment must consider the most current versions of the International Electrotechnical Commission (“IEC”) Standard 62301⁵ and IEC Standard 62087⁶, as applicable. (42 U.S.C. 6295(gg)(2)(A))

If the Secretary determines, on her own behalf or in response to a petition by any interested person, that a test procedure should be prescribed, the Secretary shall promptly publish in the *Federal Register* a proposed test procedure and afford interested persons an opportunity to present oral and written data, views, and arguments with respect to such a procedure. The comment period on a proposed rule to prescribe a test procedure shall be at least 60 days and no more than 270 days. In prescribing a test procedure, the Secretary shall take into account such information as the Secretary determines relevant to such procedure, including technological developments relating to energy use or energy efficiency of the type (or class) of covered products involved. (42 U.S.C. 6293(b)(2)) In prescribing a new test procedure, DOE must follow the statutory criteria of 42 U.S.C. 6293(b)(3)–(4) and follow the rulemaking procedures set out in 42 U.S.C. 6293(b)(2).

DOE is publishing this NOPR in accordance with the statutory authority in EPCA. DOE has determined that it was not necessary to do an early assessment request for information prior to initiating this NOPR, as the requirement in section 8(a) of 10

⁵ IEC 62301, *Household electrical appliances—Measurement of standby power* (Edition 2.0, 2011-01).

⁶ IEC 62087, *Audio, video and related equipment—Methods of measurement for power consumption* (Edition 1.0, Parts 1–6: 2015, Part 7: 2018).

CFR part 430, subpart C, appendix A (“appendix A”) to do an early assessment applies only when DOE is considering amending a test procedure, not establishing one. In this NOPR, DOE is proposing to establish a new test procedure for portable electric spas. Thus, an early assessment as to whether to move forward with a proposal to establish a test procedure for portable electric spas is not necessary.

B. Background

DOE has not previously conducted a test procedure rulemaking for portable electric spas. DOE published in the *Federal Register* a notification of proposed determination (“NOPD”) of coverage on February 16, 2022 (“February 2022 NOPD”), and published the September 2022 Final Determination, in which it determined that portable electric spas satisfy the provisions of 42 U.S.C. 6292(b)(1) to be classified as a covered product, on September 2, 2022. 87 FR 8745; 87 FR 54123.

Although portable electric spas are not currently subject to Federal energy conservation standards under EPCA, several states have adopted standards—based on an industry-developed test procedure or a similar state test procedure—including California, Arizona, Colorado, Connecticut, Maine, Massachusetts, Nevada, Oregon, Rhode Island, Vermont, and Washington.⁷

C. Deviation from Appendix A

In accordance with section 3(a) of appendix A, DOE notes that it is deviating from the provision in appendix A that DOE will finalize coverage for a product/equipment at least 180 days prior to publication of a proposed rule to establish a test procedure. 10 CFR part 430, subpart C, appendix A, section 5(c). DOE is opting to

⁷ <https://appliance-standards.org/product/portable-electric-spas>.

deviate from this provision because of: (1) the availability of an industry standard for testing portable electric spas that is already in use by State efficiency programs; and (2) general support for development of a DOE test procedure based on this industry test method as expressed by commenters in response to the February 2022 NOPD.

II. Synopsis of the Notice of Proposed Rulemaking

In this NOPR, DOE proposes to establish a test procedure for measuring the energy use of portable electric spas in a new appendix GG to subpart B of 10 CFR part 430 (“appendix GG”). DOE proposes to incorporate the applicable industry test method published by the Pool and Hot Tub Alliance (“PHTA”)⁸ in partnership with the International Code Council (“ICC”), and approved by the American National Standards Institute (“ANSI”), ANSI/APSP/ICC-14 2019, “American National Standard for Portable Electric Spa Energy Efficiency” (“ANSI/APSP/ICC-14 2019”) with certain exceptions and additions. The proposed test method produces a measure of the energy consumption of portable electric spas that represents the average power consumed by the spa, normalized to a standard temperature difference between the ambient air and the water in the spa, while the cover is on and the product is operating in its default operation mode. As discussed further in section III.C.3 of this NOPR, DOE proposes to refer to this power use metric as “standby loss.”

DOE has reviewed the relevant sections of ANSI/APSP/ICC-14 2019 and has tentatively determined that ANSI/APSP/ICC-14 2019, in conjunction with the additional test methods and calculations proposed in this test procedure, would produce test results

⁸ The PHTA is a result of a 2019 merger between the Association of Pool and Spa Professionals (“APSP”) and the National Swimming Pool Foundation (“NSPF”). The reference to APSP has been retained in the ANSI designation of ANSI/APSP/ICC-14 2019.

that reflect the energy efficiency, energy use, or estimated operating costs of a portable electric spa during a representative average use cycle. (42 U.S.C. 6314(a)(2))

DOE also has reviewed the burdens associated with conducting the proposed portable electric spa test procedure and, based on the results of such analysis, has tentatively determined that the proposed test procedure would not be unduly burdensome to conduct. (42 U.S.C. 6314(a)(2)) DOE's analysis of the burdens associated with the proposed test procedure is presented in section III.G.1 of this document.

This NOPR also proposes definitions for certain categories of portable electric spas in appendix GG and proposes requirements regarding the sampling plan and representations for portable electric spas in 10 CFR part 429.

The proposals in the NOPR are summarized in Table II.1 and discussed further in section III of this NOPR.

Table II.1 Summary of Proposals in this NOPR

Topic	Location in CFR	Summary of Proposals	Applicable Preamble Discussion
Definitions	Appendix GG	Define varieties of portable electric spas	III.B.2
Test Procedure	10 CFR 430.23 and appendix GG	Establish standby loss as the metric for portable electric spas, incorporate by reference ANSI/APSP/ICC-14 2019, and provide additional instructions for determining standby loss for portable electric spas	III.C and III.D
Sampling Plan	10 CFR 429.68	Specify the sampling plan for determination of representative values	III.E.2

DOE notes that if DOE were to finalize a test procedure for portable electric spas, manufacturers would not be required to test according to the DOE test procedure until such time as compliance is required with any future applicable energy conservation

standards that are established, unless manufacturers voluntarily chose to make representations as to the energy use or energy efficiency of a portable electric spa. See section III.H of this document for a complete discussion of compliance dates.

III. Discussion

In the following sections, DOE discusses its proposals for the portable electric spa test procedure. For each proposal, DOE provides relevant background information, discusses relevant public comments, summarizes the proposal, and provides justification for the proposal.

A. General Comments

DOE received general comments in response to the February 2022 NOPD that are relevant to establishing a test procedure for portable electric spas.

DOE received several comments that encouraged DOE to establish a test procedure for portable electric spas. PHTA and International Hot Tub Association (“IHTA”) encouraged DOE to move forward with both a test procedure and standard rule based on ANSI/APSP/ICC-14 2019. (PHTA/IHTA, EERE-2022-BT-DET-0006-0003 at p. 2)⁹ California Energy Commission (“CEC”) and New York State Energy Research and Development Authority (“NYSERDA”) also encouraged DOE to begin test procedure and energy conservation standards proceedings for portable electric spas following the final determination. (CEC, EERE-2022-BT-DET-0006-0004 at p. 5; NYSERDA, EERE-2022-BT-DET-0006-0006 at p. 2)

⁹ The parenthetical reference here and following provides a reference for information located in the docket of DOE’s rulemaking to determine coverage for portable electric spas. (Docket No. EERE-2022-BT-DET-0006, which is maintained at www.regulations.gov). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

In addition, DOE received several comments in response to the February 2022 NOPD that are relevant to topics discussed later in this NOPR. Those comments are summarized in the corresponding sections of this NOPR.

B. Scope and Definitions

1. Scope of DOE Test Procedure

The applicable industry test procedure, ANSI/APSP/ICC-14 2019,¹⁰ provides recommended minimum guidelines for testing the energy efficiency of factory-built residential portable electric spas. The standard methods included in ANSI/APSP/ICC-14 2019 provide a means to compare and evaluate the energy efficiency of different models of portable electric spas in conditions relevant to product use. CEC uses ANSI/APSP/ICC-14 2019 as the method of test for its portable electric spa standards.¹¹ And in response to the February 2022 NOPD, PHTA and IHTA also commented that several other states use, or have approved the use of, ANSI/APSP/ICC-14 2019. (PHTA/IHTA, EERE-2022-BT-DET-0006-0003 at p. 2)

Section 3 of ANSI/APSP/ICC-14 2019 defines “portable electric spa” as “a factory-built electric spa or hot tub, supplied with equipment for heating and circulating water at the time of sale or sold separately for subsequent attachment.” This ANSI/APSP/ICC-14 2019 definition is identical to the definition used by CEC and adopted by DOE in the September 2022 Final Determination. 87 FR 54123, 54125. Section 3 of ANSI/APSP/ICC-14 2019 also defines certain categories of portable electric spas, as discussed in section III.B.2 of this NOPR.

¹⁰ ANSI/APSP/ICC-14 2019 is available at: webstore.ansi.org/standards/apsp/ansiapspicc142019.

¹¹ California Code of Regulations (“CCR”) at 20 CCR 1604(g)(2)

DOE has reviewed the market for portable electric spas, and DOE has tentatively concluded that all products on the market can be tested using methods consistent with or similar to those in ANSI/APSP/ICC-14 2019 based on DOE's review. DOE has not found any products meeting DOE's definition of portable electric spa that would warrant exclusion from the scope of the DOE test procedure. Therefore, DOE proposes for the scope of the test procedure to include all products meeting the definition of "portable electric spa" in 10 CFR 430.2.

DOE requests comment on its proposal for the scope of the test procedure to include all products that meet the definition of "portable electric spa." DOE requests comment on whether any additional products should be included within the scope of the proposed DOE test procedure. DOE requests comment on whether any products that meet the definition of "portable electric spa" should be excluded from the scope of the proposed DOE test procedure, and, if so, on what basis.

2. Definitions of Categories of Portable Electric Spas

Section 3 of ANSI/APSP/ICC-14 2019 defines the following categories of portable electric spas:

(1) *Standard Spa*: A portable electric spa that is not an inflatable spa, an exercise spa, or the exercise spa portion of a combination spa.

(2) *Exercise Spa* (also known as a swim spa): Variant of a portable electric spa in which the design and construction includes specific features and equipment to produce a water flow intended to allow recreational physical activity including, but not limited to, swimming in place.

(3) *Combination Spa*: A portable electric spa with two separate and distinct reservoirs, where (a) one reservoir is an exercise spa; (b) the second reservoir is a standard spa; and (c) each reservoir has an independent water temperature setting control.

(4) *Inflatable Spa*: A portable electric spa where the structure is collapsible and designed to be filled with air to form the body of the spa.

The categories of portable electric spas defined in ANSI/APSP/ICC-14 2019 differ in the way they are tested and in the allowed energy consumption specified in ANSI/APSP/ICC-14 2019. Based on DOE’s review of the market, DOE has tentatively determined that the category definitions defined in ANSI/APSP/ICC-14 2019 accurately categorize the products available on the market. Therefore, the category definitions would be relevant for the DOE test procedure, if adopted. DOE is proposing to include definitions for “standard spa,” “exercise spa,” “combination spa,” and “inflatable spa” in section 3 of appendix GG that are generally consistent with those category definitions in ANSI/APSP/ICC-14 2019. For all definitions other than “exercise spa,” DOE is proposing a definition that is identical to the wording in ANSI/APSP/ICC-14 2019. For “exercise spa,” DOE is proposing to include only the first paragraph of the definition from ANSI/APSP/ICC-14 2019 because the second paragraph¹² of the definition is informative, describing examples of products that may be included within the definition.

DOE requests comment on whether the definitions for the categories of portable spas proposed in section 3 of appendix GG (*i.e.*, “standard spa,” “exercise spa,”

¹² The second paragraph of the definition of exercise spa states the following: Exercise spas may include peripheral jetted seats intended for water therapy, heater, circulation and filtration system, or may be a separate distinct portion of a combination spa and may have separate controls. These aquatic vessels are of a design and size such that it has an unobstructed volume of water large enough to allow the 99th Percentile Man as specified in ANSI/APSP/ICC-16 to swim or exercise in place.

“combination spa,” and “inflatable spa”) adequately delineate the categories of portable electric spas and whether any additional or different categories are warranted.

3. Therapeutic Spas

Section 1.3 of ANSI/APSP/ICC-14 2019 states that spas operated for medical treatment or physical therapy, among other types,¹³ are not included within the scope of ANSI/APSP/ICC-14 2019. However, DOE notes that the definition of exercise spa in Section 3 of ANSI/APSP/ICC-14 2019 indicates that exercise spas may include peripheral jetted seats intended for water therapy. DOE has reviewed the market and found that “therapeutic,” “water therapy,” or “hydrotherapy” applications are frequently advertised in marketing materials for many portable electric spas, including many models that do not appear to have features that are different than those found on models that do not mention therapeutic applications in their marketing materials.

DOE presumes that the types of spas operated for medical treatment or physical therapy intended to be referenced by Section 1.3 of ANSI/APSP/ICC-14 2019 would not be portable and, therefore, would not be considered a *portable* electric spa (emphasis added). As discussed further in section III.D.2 of this NOPR, DOE is proposing to exclude all of Section 1 of ANSI/APSP/ICC-14 2019 from appendix GG. To the extent that any of the categories of spas referenced by Section 1.3 of ANSI/APSP/ICC-14 2019 do not meet the definition of a portable electric spa, such products would not be within the scope of the test procedure.

¹³ Section 1.3 of ANSI/APSP/ICC-14 2019 states the following: These requirements do not apply to public spas (ANSI/APSP-2), permanently installed or inground spas (ANSI/APSP/ICC-3), or other spas, such as those operated for medical treatment, physical therapy, or other purposes.

DOE requests comment on whether there are portable electric spas used for special purposes, such as those operated for medical treatment or physical therapy, that should be excluded from the scope of the proposed DOE test procedure or tested in a different manner. If so, DOE requests comment on the method to determine the spas to exclude or test differently.

4. Portable Electric Spa Size

ANSI/APSP/ICC-14 2019 does not specify any minimum or maximum size to limit the scope of ANSI/APSP/ICC-14 2019.

Based on DOE's tentative conclusion that all portable electric spas on the market can be tested using methods consistent with or similar to those in ANSI/APSP/ICC-14 2019, DOE has tentatively determined that there is no need to limit the scope of the DOE test procedure based on the size of the portable electric spa. Therefore, DOE is not proposing to specify any minimum or maximum size to limit the scope of the DOE test procedure.

DOE requests comment on its tentative determination not to propose a minimum or maximum size to limit the scope of the proposed DOE test procedure.

C. Energy Consumption Metric

1. Background

As discussed, EPCA requires that any test procedures prescribed or amended must be reasonably designed to produce test results which reflect energy efficiency, energy use, or estimated annual operating cost of a given type of covered product during a representative average use cycle, and that test procedures not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

In addition, EPCA requires that DOE amend its test procedures for all covered products to integrate measures of standby mode and off mode energy consumption into the overall energy efficiency, energy consumption, or other energy descriptor, taking into consideration the most current versions of IEC Standards 62301 and 62087, unless the current test procedure already incorporates the standby mode and off mode energy consumption, or if such integration is technically infeasible. (42 U.S.C. 6295(gg)(2)(A))

If an integrated test procedure is technically infeasible, DOE must prescribe separate standby mode and off mode energy use test procedures for the covered product, if that separate test is technically feasible. (42 U.S.C. 6295(gg)(2)(A)(ii))

EPCA defines three different modes of operation in 42 U.S.C. 6295(gg)(1)(A). “Active mode” means the condition in which an energy-using product is connected to a main power source, has been activated, and provides one or more main functions.

“Standby mode” means the condition in which an energy-using product is connected to a main power source and offers one or more of the following user-oriented or protective functions: (a) to facilitate the activation or deactivation of other functions (including active mode) by remote switch (including remote control), internal sensor, or timer; or (b) continuous functions, including information or status displays (including clocks) or sensor-based functions. “Off mode” means the condition in which an energy-using product is connected to a main power source and is not providing any standby or active mode function. *See* 42 U.S.C. 6295(gg)(1)(A)(i) through (iii).

2. Modes of Use

Based on market research performed by DOE and analyses from CEC,¹⁴ portable electric spas are typically connected to a main power source, activated, and provide one or more main functions 24 hours a day, 365 days per year. Although a portable electric spa is typically used for a small number of hours throughout the year, heating the water from ambient temperature to the use temperature takes a long time, and the water must be filtered regularly to keep it fresh. Therefore, most users maintain the spa at their preferred use temperature at all times with periodic or continuous water filtration, even when not in use.¹⁵

Based on DOE's research and analysis, DOE has found that, during most hours of the year, the spa contains no people, the spa cover is on, and the spa continually or periodically filters and heats the water in the spa, so that the spa is ready for use. During a smaller number of hours in a year, the spa cover is removed, and consumers use the spa. Consumers who prefer calm water in the spa may not activate any other spa features, such that the spa continues operating in the same operation mode as when the spa is covered. Conversely, other consumers may opt to activate bubbles, jets, or other features of the spa during usage.

Finally, research has shown that spas that are newly installed, or that were drained and re-filled, will experience a small number of hours during the year in which the spa is heating water from its initial water fill temperature to the preferred operating temperature.

¹⁴ Final Staff Report, Analysis of Efficiency Standards and Marking for Spas, 2018 Appliance Efficiency Rulemaking for Spas Docket Number 18-AAER-02 TN 222413. Available online at efiling.energy.ca.gov/GetDocument.aspx?tn=222413&DocumentContentId=31256.

¹⁵ *Ibid.*

DOE has tentatively concluded that all of these operational modes for portable electric spas would be considered “active modes” as defined in 42 U.S.C.

6295(gg)(1)(A)(i). As such, portable electric spas are considered to operate in active mode at all times, and standby mode and off mode, as defined by EPCA, are not applicable to portable electric spas. Therefore, DOE has tentatively concluded that there is no standby mode or off mode energy consumption that can be accounted for or incorporated into the proposed DOE test procedure.

DOE requests comment on whether it is necessary to measure standby mode or off mode energy consumption in the proposed DOE test procedure.

3. Metric for Active Mode Energy Consumption

ANSI/APSP/ICC-14 2019 includes a method for measuring the energy consumption of portable electric spas while the cover is on and the spa is operating in its default operation mode.¹⁶ The metric used by ANSI/APSP/ICC-14 2019 is normalized standby power, which is the average power consumed by the spa, normalized to a standard temperature difference between the ambient air and the water in the spa. Normalized standby power is the metric used by CEC and other states that use ANSI/APSP/ICC-14 2019 as the basis for their efficiency programs. It is also the metric used by the Canadian Standards Association (“CSA”) test method CAN/CSA-C374-11 (R2021),¹⁷ “Energy performance of hot tubs and spas” (“CAN/CSA-374-11 (R2021)”), which is a method used for testing portable electric spas in Canada.

¹⁶ Section 5.1 of ANSI/APSP/ICC-14 2019 specifies that the purpose of ANSI/APSP/ICC-14 2019 is to measure the energy consumption in “standby mode.” This use of the term “standby mode” is not consistent with the term standby mode as defined by EPCA, but rather, as explained in section III.C.2 of this NOPR, refers to a type of active mode as defined by EPCA.

¹⁷ www.csagroup.org/store/product/2703317/

According to analyses from CEC,¹⁸ the mode of operation measured in ANSI/APSP/ICC-14 2019 represents approximately 75 percent of the energy consumed by a portable electric spa. DOE estimates that this percentage may be approximately 95 percent in some cases, based on investigative testing that DOE performed and data on typical spa usage from PKData.¹⁹ Taken together, the two estimates indicate that the mode of operation measured in ANSI/APSP/ICC-14 2019 represents the largest portion of active mode energy consumption by far. Based on these data sources, DOE has tentatively determined that the most representative average use cycle or period of use of a portable electric spa is with the spa cover on (*i.e.*, with no consumers in the spa), and with the spa continually or periodically filtering and heating the water in the spa, such that the spa is always ready for use.

DOE is not aware of any existing test methods that measure the energy consumption in any other parts of active mode described in section III.C.2 of this NOPR. DOE has also been unable to determine any representative durations for those portions of active mode use.

As a result, DOE is proposing to use normalized standby power from ANSI/APSP/ICC-14 2019 as the performance-based metric for representing the energy use of portable electric spas. DOE is proposing to refer to this metric as “standby loss,” rather than “normalized standby power,” to avoid misinterpretation with the statutory definition of “standby mode” as defined in 42 U.S.C. 6295(gg)(1)(A)(iii). DOE also notes that the term “standby loss” has been used previously to describe the energy use of

¹⁸ Final Staff Report, Analysis of Efficiency Standards and Marking for Spas, 2018 Appliance Efficiency Rulemaking for Spas Docket Number 18-AAER-02 TN 222413. Available online at efiling.energy.ca.gov/GetDocument.aspx?tn=222413&DocumentContentId=31256.

¹⁹ P.K. Data Inc. 2022 Hot Tub Market Data: Custom Compilation for Lawrence Berkeley National Laboratory (through 2021). 2022. Alpharetta, GA. (Last accessed April 12, 2022) <https://www.pkdata.com/reports-store.html#/>.

a water heater associated with maintaining water temperature.²⁰ A portable electric spa is similar to a water heater in that regard, because both products consume energy to maintain their contents at a specified temperature over a long period of time. DOE is proposing to define the term “standby loss” in section 3.9 of appendix GG as “the mean normalized power required to operate the portable electric spa in default operation mode with the cover on, as calculated in section 4.3 of this appendix.”

DOE requests comment on its proposal to use standby loss, equivalent to the normalized standby power as defined by ANSI/APSP/ICC-14 2019, as the performance-based metric for representing the energy use of portable electric spas.

DOE requests comment on its proposed definition for “standby loss” in section 3.9 of appendix GG.

DOE requests comment and data on the representative operation of spas when in use with the cover removed, including typical frequency and duration of use, operation of jets or other features, and number of users. DOE also requests comment on how usage varies across spa types.

DOE requests comment on any test methods that measure the operation of spas when in use with the cover removed.

D. Test Method

This section discusses DOE's proposal for a test method to measure all quantities needed to determine portable electric spa standby loss in a standardized and reproducible

²⁰ See sections 1.13 and 6.3.3 of appendix E to subpart B of 10 CFR part 430.

manner. DOE proposes to incorporate by reference the test method contained in certain applicable sections of ANSI/APSP/ICC-14 2019 as the basis for the portable electric spas test procedure. DOE also proposes several modifications and additions to ANSI/APSP/ICC-14 2019 to ensure the repeatability, reproducibility, and representativeness of test results. These proposals are discussed in sections III.D.1 through III.D.11 of this NOPR.

1. Referenced Industry Test Method

As discussed, ANSI/APSP/ICC-14 2019 contains a test method for measuring the standby loss²¹ of portable electric spas. ANSI/APSP/ICC-14 2019 measures standby loss as the average power required to maintain the spa's water at a ready-to-use temperature over a period of at least 72 hours, while the spa remains covered in a controlled-temperature environment.

The test method in CAN/CSA-374-11 (R2021) is very similar to that in ANSI/APSP/ICC-14 2019, differing only in ambient temperature, floor design, and certain aspects of measurement. DOE is not aware of any other industry test methods for measuring standby loss in portable electric spas.

In response to the February 2022 NOPD, both PHTA/IHTA and CEC encouraged DOE to proceed with both a test procedure and an energy conservation standard based on ANSI/APSP/ICC-14 2019. (PHTA/IHTA, EERE-2022-BT-DET-0006-0003 at p. 2; CEC, EERE-2022-BT-DET-0006-0004 at p. 5)

²¹ As discussed section III.C.3 of this document, ANSI/APSP/ICC-14 2019 uses the term “normalized standby power” to refer to the metric that DOE is proposing to call “standby loss.” To avoid confusion about multiple terms, the term “standby loss” is used throughout section III.D of this NOPR to refer to “normalized standby power” in ANSI/APSP/ICC-14 2019.

DOE has reviewed ANSI/APSP/ICC-14 2019 and tentatively concluded that it is reasonably designed to produce test results to determine the energy use of portable electric spas during a representative average use cycle or period of use. DOE also reviewed CAN/CSA-374-11 (R2021) and has tentatively concluded that ANSI/APSP/ICC-14 2019 is a better test procedure to adopt for the DOE test procedure. Although the methods in ANSI/APSP/ICC-14 2019 and CAN/CSA-374-11 (R2021) are very similar, several of the requirements in CAN/CSA-374-11 (R2021) are specified in only International System of Units (“SI”) units and not specified in U.S. customary system (“USCS”) units (*e.g.* °C vs. °F). The need to provide conversions from SI to USCS for these values means that adoption of CAN/CSA-374-11 (R2021) in the DOE test procedure would require more modifications to the adopted test procedure than adoption of ANSI/APSP/ICC-14 2019.

Therefore, DOE is proposing to adopt specific sections of ANSI/APSP/ICC-14 2019 in DOE’s proposed test procedure for portable electric spas, along with several proposed modifications and additions that DOE has tentatively determined would improve repeatability and representativeness of test results.

These specific modifications, additions, and exceptions are discussed in sections III.D.2 through III.D.11 of this NOPR.

DOE requests comment on its proposal to adopt specific sections of ANSI/APSP/ICC-14 2019 in DOE’s proposed test procedure for portable electric spas.

2. Excluded Sections of ANSI/APSP/ICC-14 2019

DOE proposes to exclude the following sections, subsections, and appendices of ANSI/APSP/ICC-14 2019 from DOE’s proposed test procedure:

- Sections 1, 2, 4, 6, and 7 in their entirety;
- Section 3 definitions for “cover, specified,” “fill volume,” “rated volume,” and “standby mode;”
- Subsections 5.1, 5.2, 5.5.2, 5.5.4, 5.5.5, and 5.7;
- Appendix A subsection “Chamber floor”; and
- Appendices B, C, and D.

The following paragraphs discuss the rationale for excluding each section from the proposed DOE test procedure.

Section 1 of ANSI/APSP/ICC-14 2019 discusses the scope of applicability of ANSI/APSP/ICC-14 2019. Certain categories of spas mentioned in Section 1, such as public spas and permanently installed or inground spas, are not applicable to the proposed DOE test procedure because they do not meet DOE’s definition of portable electric spa. To avoid ambiguity regarding the applicability of the proposed Federal test procedure for portable electric spas, DOE is proposing to exclude Section 1 of ANSI/APSP/ICC-14 2019 in its entirety and to define instead the scope of the DOE test procedure in section 2 of appendix GG.

Section 2 of ANSI/APSP/ICC-14 2019 provides normative references to other industry test procedures. None of the normative references in section 2 are necessary for, or relevant to, the proposed DOE test procedure. As a result, DOE is proposing to exclude Section 2 of ANSI/APSP/ICC-14 2019 in its entirety.

Section 4.1 of ANSI/APSP/ICC-14 2019 requires that all certification bodies shall be accredited to ISO/IEC 17065. Section 4.2 of ANSI/APSP/ICC-14 2019 requires that all testing laboratories shall be qualified by a certification body or accredited by an accreditation body who is a member of the International Laboratory Accreditation Cooperation (“ILAC”). Sections 4.3 through 4.5 of ANSI/APSP/ICC-14 2019 provide further specifications regarding the roles and responsibilities of the testing laboratory, certification body, and/or accredited body. Section 5.2 and appendices B and C of ANSI/APSP/ICC-14 2019 specify further requirements and procedures for qualification of the testing laboratory by a certification body.

DOE is not proposing to adopt the requirement in Sections 4.1 and 4.2 of ANSI/APSP/ICC-14 2019 that a testing laboratory be qualified by a certification body accredited to ISO/IEC 17065 or accredited by an accreditation body who is a member of ILAC. DOE’s experience in conducting testing according to ANSI/APSP/ICC-14 2019 and to the DOE test procedure as proposed in this NOPR suggests that the proposed DOE test procedure adequately outlines the details required to perform the test. As a result, the accreditation as specified in Section 4.2 of ANSI/APSP/ICC-14 2019 is not necessary to achieve repeatable, reproducible, and representative test results from DOE’s proposed test procedure for portable electric spas. DOE has tentatively concluded that the requirement for a testing laboratory to be qualified by a certification body accredited to ISO/IEC 17065 or accredited by an accreditation body who is a member of ILAC is not necessary for the purposes of conducting the DOE test procedure as proposed. Therefore, DOE is proposing to exclude the sections in ANSI/APSP/ICC-14 2019 regarding laboratory qualification from the proposed DOE test procedure.

Section 6 of ANSI/APSP/ICC-14 2019 provides maximum allowable energy consumption functions; *i.e.* standards applicable to portable electric spas. These standard levels are not applicable to the proposed DOE test procedure and DOE is proposing to exclude Section 6 from the proposed DOE test procedure. However, DOE would review Section 6 of ANSI/APSP/ICC-14 2019 when considering establishing Federal standards for portable electric spas in a separate energy conservation standard rulemaking.

Section 7 of ANSI/APSP/ICC-14 2019 specifies labeling requirements for portable electric spas. These labeling requirements are not applicable to the proposed DOE test procedure and would not be required for use were DOE to finalize a test procedure for portable electric spas. As a result, DOE is proposing to exclude Section 7 from the proposed DOE test procedure.

Section 5.1 of ANSI/APSP/ICC-14 2019 states that the purpose of the test method is to measure the energy consumption in standby mode, using a repeatable and reproducible test procedure, and that the results shall be used to calculate standby power demand for each basic model. Section 3 of ANSI/APSP/ICC-14 2019 defines “standby mode” as “all settings at default as shipped by the manufacturer, except water temperature, which may be adjusted to meet the test conditions. No manual operations are enabled.” As discussed in section III.C.3 of this NOPR, use of the term “standby mode” in ANSI/APSP/ICC-14 2019 is not consistent with the term “standby mode” as defined by EPCA, but rather, as explained in section III.C.2 of this NOPR, refers to a type of active mode as defined by EPCA. 42 U.S.C. 6295(gg)(1)(A)(iii) As a result, DOE is proposing to exclude Section 5.1 and the “standby mode” definition in ANSI/APSP/ICC-14 2019 from the proposed DOE test procedure.

Section 5.5.2 of ANSI/APSP/ICC-14 2019 specifies that the spa shall be filled with water to the halfway point between the bottom of the skimmer opening and the top of the skimmer opening. In the absence of a wall skimmer, the fill volume is 6 inches below the overflow level of the spa. The resulting fill level is defined as “fill volume” and corresponds to the definition of “fill volume” provided in Section 3 of ANSI/APSP/ICC-14 2019. Section 3 of ANSI/APSP/ICC-14 2019 defines “rated volume” as the water capacity of a portable electric spa, in gallons (liters), as specified by the manufacturer on the spa, on the spa packaging, or the spa marketing materials. These water fill volume instructions and definitions are not consistent with DOE’s proposed requirements for fill volume in section 4.1.4 of appendix GG, as explained in section III.D.6 of this NOPR. Therefore, DOE is proposing to exclude Section 5.5.2 and the volume definitions in Section 3 in ANSI/APSP/ICC-14 2019 from the proposed DOE test procedure.

Section 5.5.4 of ANSI/APSP/ICC-14 2019 specifies that the ambient air temperature shall be a maximum of 63 °F (17 °C) for the duration of the test. This temperature is inconsistent with DOE’s proposed requirements for ambient temperature in section 4.2.1 of appendix GG, as explained in section III.D.3 of this NOPR. As a result, DOE is proposing to exclude Section 5.5.4 in ANSI/APSP/ICC-14 2019 from the proposed DOE test procedure.

Section 5.5.5 of ANSI/APSP/ICC-14 2019 states that the manufacturer’s specified cover shall be used during the test. Section 3 of ANSI/APSP/ICC-14 2019 defines “cover, specified” as the cover that is provided or specified by the spa manufacturer. As discussed in section III.D.7 of this NOPR, DOE is proposing more explicit requirements

regarding the cover that must be used during testing and is proposing to exclude Section 5.5.5 in ANSI/APSP/ICC-14 2019 from the proposed DOE test procedure.

Section 5.7 of ANSI/APSP/ICC-14 2019 specifies the equations for calculating “standby power” as that term is defined by ANSI/APSP/ICC-14 2019. These equations include standard temperature differences defined for each type of portable electric spa, among other defined parameters. DOE is proposing in section 4.3 of appendix GG to reproduce the equations in Section 5.7 of ANSI/APSP/ICC-14 2019, using the term “standby loss” instead of “standby power,” and to use different standard temperature differences that correspond with DOE’s proposed water and air temperature requirements, as explained in section III.D.11 of this NOPR, and is proposing to exclude Section 5.7 in ANSI/APSP/ICC-14 2019 from the proposed DOE test procedure.

Appendix A of ANSI/APSP/ICC-14 2019 includes subsection “Chamber floor” that provides requirements for the floor on which the spa is installed, including the option to include 2 inches of insulation between the chamber floor and the spa. These requirements are not consistent with DOE’s proposed requirements for the chamber floor in section 4.1.2 of appendix GG, as discussed in section III.D.4.b of this NOPR. Therefore, DOE is proposing to exclude the “Chamber floor” subsection of appendix A in ANSI/APSP/ICC-14 2019 from the proposed DOE test procedure.

Informative appendix D of ANSI/APSP/ICC-14 2019 contains a template for reporting data from the portable electric spa tests. This template would not be required for use were DOE to finalize a test procedure for portable electric spas, so DOE is proposing to exclude appendix D in ANSI/APSP/ICC-14 2019 from the proposed DOE test procedure.

DOE requests comment on whether any of the sections of ANSI/APSP/ICC-14 2019 that DOE is proposing to exclude from the proposed DOE test procedure should be included in the DOE test procedure.

3. Ambient Air Temperature

DOE reviewed the ambient air temperature requirements specified in several existing test procedures for portable electric spas.

ANSI/APSP/ICC-14 2019 requires all portable electric spas to be tested with an ambient air temperature of 63 °F or lower.

An earlier version of the CEC portable electric spa test procedure, on which ANSI/APSP/ICC-14 2019 is based, specified an ambient air temperature of 60 °F \pm 3 °F.²² DOE notes that 60 °F is approximately equal to the annual average temperature for all of California.²³

CAN/CSA-374-11 (R2021) specifies a mandatory test with ambient temperature of 44.6 °F \pm 1.8 °F (7 °C \pm 2 °C), and an optional cold-weather test with ambient temperature of 17.6 °F \pm 1.8 °F (–8 °C \pm 2 °C).

The proposed DOE test procedure will be used for representations of portable electric spa energy consumption throughout the United States; therefore, the specified ambient air temperature must reflect a nationally representative value. DOE determined a nationally representative ambient air temperature that could be applicable to portable

²² See table in p. 5 of CEC Docket Number 12-AAER-2G, document TN 73027. Available online at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=73027&DocumentContentId=8328>

²³ See climate data from National Oceanic and Atmospheric Administration here: https://www.ncei.noaa.gov/cag/statewide/time-series/4/tavg/12/12/2012-2021?base_prd=true&begbaseyear=2012&endbaseyear=2021

electric spas throughout the United States by first determining the average annual air temperature across all states in the contiguous United States, and then calculating a weighted average across all states, weighted by the estimated number of spas installed in each state.²⁴ DOE used data from the National Oceanic and Atmospheric Administration²⁵ indicating average temperature in each state for the years 2012-2021, and data from PKData²⁶ indicating the number of spas installed in each state in 2020. This methodology resulted in an average air temperature of 56.1 °F. Rounded to the nearest degree Fahrenheit, DOE has tentatively determined that 56 °F is a nationally representative ambient air temperature applicable to testing portable electric spas.

Based on the preceding analysis, DOE is proposing to specify 56.0 °F as the target ambient air temperature in section 4.2.1 of appendix GG.

Consistent with the earlier CEC test procedure, DOE is proposing to specify a tolerance of ± 3 °F on the ambient air temperature during the test. DOE tentatively determines that specifying an allowable range of temperatures will provide greater assurance of repeatable, reproducible, and representative test results compared to the approach used in ANSI/APSP/ICC-14 2019 of specifying only a maximum ambient air temperature.

For the reasons discussed previously, DOE is proposing in section 4.2.1 of appendix GG to specify that the ambient air temperature must be maintained at 56.0 ± 3 °F for the duration of the test. DOE is also proposing to specify that this requirement

²⁴ DOE used only the contiguous U.S., excluding Alaska and Hawaii, because the data from PKData on the number of spas in each state excluded Alaska and Hawaii.

²⁵ <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/statewide/time-series>

²⁶ P.K. Data Inc. 2022 Hot Tub Market Data: Custom Compilation for Lawrence Berkeley National Laboratory (through 2021). 2022. Alpharetta, GA. (Last accessed April 12, 2022) <https://www.pkdata.com/reports-store.html#/>

applies to each individual ambient air temperature measurement taken for the duration of the test. This proposal makes clear that the ambient temperature requirement applies to individual measurements of ambient air temperature and not the overall average ambient air temperature during the test.

DOE requests comment on its determination that, rounded to the nearest degree, 56 °F is a nationally representative ambient air temperature applicable to testing portable electric spas.

DOE requests comment on its proposal to specify an ambient air temperature of 56.0 ± 3.0 °F during testing. If commenters recommend a different ambient temperature, DOE requests data demonstrating the representativeness of that ambient temperature.

4. Chamber

a. Requirements in ANSI/APSP/ICC-14 2019

ANSI/APSP/ICC-14 2019 includes informative appendix A that provides minimum requirements for the chamber in which the portable electric spa is installed. These include optional specifications regarding chamber internal dimensions, air circulation, chamber insulation, and chamber floor insulation. The requirements to use this appendix are referenced only in the sections of ANSI/APSP/ICC-14 2019 pertaining to qualification of the test laboratory. As discussed in section III.D.2 of this NOPR, DOE is proposing to exclude all sections of ANSI/APSP/ICC-14 2019 pertaining to qualification of the test laboratory. As a result, none of the sections of ANSI/APSP/ICC-14 2019 that DOE is proposing to include in DOE's proposed test procedure require the use of appendix A to ANSI/APSP/ICC-14 2019.

DOE has reviewed appendix A to ANSI/APSP/ICC-14 2019 and has tentatively concluded that the specifications regarding chamber internal dimensions, air flow, and chamber insulation are appropriate for testing portable electric spas and would produce test results that reflect representative consumer use and would not be unduly burdensome to require for testing. However, DOE has tentatively concluded that the specifications regarding chamber floor would not provide test results that are representative of consumer use, as discussed further in section III.D.4.b of this NOPR.

Therefore, DOE proposes to specify in section 4.1.1 of appendix GG to install the portable electric spa in a chamber satisfying the requirements specified in appendix A to ANSI/APSP/ICC-14 2019 regarding chamber internal dimensions, air flow, and chamber insulation.

DOE requests comment on its tentative determination that the specifications regarding chamber internal dimensions, air flow, and chamber insulation in appendix A to ANSI/APSP/ICC-14 2019 are appropriate for testing portable electric spas and would produce test results that reflect representative consumer use and would not be unduly burdensome to require for testing.

DOE requests comment on the proposed chamber requirements in section 4.1.1 of appendix GG and whether any alternate or additional requirements are needed.

b. Chamber Floor Requirements

Appendix A to ANSI/APSP/ICC-14 2019 specifies that the chamber floor may be insulated with 2 inches of polyisocyanurate insulation, that the insulation shall be laid directly on a level surface, and that the insulating layer shall be sheathed with at least 0.5 inches of plywood. DOE conducted an analysis to determine whether these requirements

would produce test results that reflect representative consumer use in a proposed test procedure for portable electric spas.

DOE reviewed installation and owner's manuals for a representative sample of portable electric spas available on the market and found that the majority of manuals specify that the preferred method of installation is directly on a poured concrete slab. A smaller portion of manuals specify installation on a wooden deck, while a small number of manuals specify other acceptable installation surfaces, such as concrete pavers or crushed gravel. None of the manuals that DOE reviewed specify installing the portable electric spa with insulation between the ground and the spa. Presuming that portable electric spas are installed consistent with the installation manual, DOE's findings suggest that the most representative installation of a portable electric spa is to be installed directly on a concrete slab with no insulation between that surface and the spa.

DOE performed investigative testing to determine the extent to which installation with the optional insulation specified in the chamber floor section of appendix A to ANSI/APSP/ICC-14 2019 impacts energy use in comparison to installation with no insulation. The results of this testing are summarized in Table III.1.

Table III.1 Impact of Chamber Floor Insulation on Energy Use

Spa	Measured Standby Loss (W)		Measured Effect of Floor Insulation on Standby Loss
	With no insulation on chamber floor	With chamber floor insulation as specified in Appendix A to ANSI/APSP/ICC-14 2019	
Spa 1	339	213	-37%
Spa 2	233	204	-13%

As shown in Table III.1, the amount of insulation and plywood specified in the chamber floor section of appendix A to ANSI/APSP/ICC-14 2019 reduced standby loss by up to 37 percent compared to testing with no insulation. These results demonstrate that the inclusion or exclusion of chamber floor insulation has a significant impact on measured energy use.

To ensure that test results are representative of an average consumer use cycle or period of use, DOE is proposing in section 4.1.2 of appendix GG to specify that the portable electric spa be installed directly on a level concrete floor or slab.

As discussed, none of the installation manuals that DOE reviewed specify installing the spa with insulation between the ground and the spa. Although DOE is not aware of any portable electric spas that include insulation and/or other materials such as plywood as part of the installation materials for the spa, DOE presumes that a consumer would be likely to install insulation and/or plywood if insulation and/or wood were to be included with the spa and specified by the installation instructions to be installed for use. In such case, DOE tentatively concludes that testing with the insulation and/or plywood provided would produce test results that are representative of consumer use. To ensure representative test results in such cases, DOE is proposing to specify in section 4.1.2 of appendix GG that, if insulation and/or plywood is provided with the portable electric spa, and the manufacturer's installation instructions indicate that insulation and/or plywood be installed between the ground and the spa for normal use, to install the minimum amount of insulation between the floor and the spa that the manufacturer's installation instructions specify to be installed between the floor and the spa. Otherwise, install no insulation or plywood between the floor and the portable electric spa.

DOE recognizes that certain test facilities may not have concrete floors or slabs within the test area that otherwise would meet the specified test conditions and installation requirements proposed for portable electric spas. For example, some chambers have solid or perforated floors made of steel or aluminum. DOE welcomes information regarding the availability of concrete floors or slabs within test facilities and potential alternatives for testing that would best represent portable electric spa operation to reflect representative consumer use when installed on concrete floors or slabs.

DOE seeks comment on its tentative determination, based on review of portable electric spa user manuals, that the most representative installation of a portable electric spa is to be installed directly on concrete with no insulation between that surface and the spa.

DOE requests comment on its proposal to specify installing the portable electric spa directly on the chamber floor without any insulation between the spa and the floor.

DOE seeks comment on its presumption that a consumer would be likely to install insulation and/or wood if insulation and/or wood were to be included with the portable electric spa and specified by the installation instructions to be installed for use, and that in such cases, testing with the insulation and/or wood provided would produce test results that are representative of consumer use.

DOE requests comment on the availability of concrete floors or slabs within test facilities and on whether any test chamber floor alternatives, such as solid or perforated steel or aluminum floors, would represent portable electric spa operation when installed on concrete floors or slabs.

5. Electrical Supply Voltage and Amperage Configuration

Section 5.5.6 of ANSI/APSP/ICC-14 2019 specifies that the voltage supplied to the portable electric spa be within 10 percent of the nameplate voltage during testing, but specifies no other requirements for the electrical supply or amperage configuration. The following paragraphs discuss additional considerations regarding voltage supply and amperage configuration relevant to testing portable electric spas.

DOE's market research indicates that most portable electric spas operate at a single voltage (*e.g.* either 120 or 240 volts ("V"), nominally). Models that operate at 120 V are often referred to as "plug and play" models and are plugged into an ordinary 120 V electrical outlet. Models that operate at 240 V are typically required to be permanently connected (*i.e.*, hard wired) into a 240 V circuit, similar to that which would supply an electric water heater. DOE is aware of models on the market that can be configured to operate at either 120 V or 240 V, depending on the preference of the consumer. Such models are most often pre-configured by the manufacturer to operate at 120 V and include instructions for converting the model to operate at 240 V. The conversion process typically requires changing the configuration of internal wiring and controls in addition to changes to the external wiring.

Similarly, certain portable electric spas on the market allow the consumer to configure the maximum amperage at which the portable electric spa can operate at a particular voltage level. This configurability ensures that the operation of the portable electric spa is compatible with the electrical service of the home. For example, for a home with a 50 ampere ("A") circuit breaker available, all the features on a particular portable electric spa may be capable of operating at the same time; whereas, for a home with only a 30 A circuit breaker available, the portable electric spa may still operate,

albeit with reduced or restricted functionality. Units that provide amperage configurability most commonly operate at 240 V. On such units, changing the maximum amperage corresponds to allowing more or fewer components to operate at the same time (*e.g.*, whether the heater is able to be energized at the same time as a secondary pump), or setting the level of operation for certain components (*e.g.*, varying the number of heating elements that can operate simultaneously).

The choice of voltage and maximum amperage can affect the rate of heating in the portable electric spa and the occurrence of multiple components of the spa (*e.g.*, pump and heater) operating simultaneously. These differences in operation may affect measured energy use. Therefore, DOE has tentatively concluded that additional specifications regarding the supply voltage and amperage configuration to be used during testing would ensure the reproducibility of the DOE test procedure across different test laboratories.

DOE is proposing in section 4.1.3 of appendix GG a hierarchy to use for configuring the voltage and amperage configuration of the portable electric spa during testing. Specifically, DOE is proposing that if the portable electric spa can be installed or configured with multiple options of voltage, maximum amperage, or both, testing should use the as-shipped configuration. If no configuration is provided in the as-shipped condition, DOE is proposing that testing be conducted using the option specified in the manufacturer's instructions as the recommended configuration for normal consumer use. If no configuration is provided in the as-shipped condition and the manufacturer's instructions do not provide a recommended configuration for normal operation, DOE is proposing that testing be conducted using the maximum voltage specified in the

manufacturer's installation instructions and the maximum amperage that the manufacturer's installation instructions specify for use with the maximum voltage.

DOE requests comment on the proposed hierarchy for specifying voltage and maximum amperage for portable electric spas that have multiple options for voltage and/or amperage. DOE requests comment on any cases for which the proposed language would not make clear the voltage and/or maximum amperage to be used during testing.

6. Fill Volume

Section 3 of ANSI/APSP/ICC-14 2019 defines two quantities for the volume of water in a portable electric spa: fill volume and rated volume. "Fill volume" is the amount of water that is required to be in the spa during testing and is defined as the halfway point between the bottom of the skimmer opening and the top of the skimmer opening. In the absence of a wall skimmer, the fill volume is 6 inches (152 mm) below the overflow level of the spa. "Rated volume" is defined as the water capacity of a portable electric spa, in gallons (liters), as specified by the manufacturer on the spa, on the spa packaging, or the spa marketing materials. ANSI/APSP/ICC-14 2019 provides no requirement for the rated volume to correspond to the fill volume. ANSI/APSP/ICC-14 2019 also does not specify any tolerance on the fill volume measurement.

DOE compared fill volume and rated volume of portable electric spas on the market by reviewing certification records available in the CEC Modernized Appliance Energy Efficiency Database System ("MAEDbS").²⁷ Fill volume and rated volume are equivalent for some models, but differ for other models. For most models with differing values of fill volume and rated volume, the variation is within a few percent. For

²⁷ CEC Modernized Appliance Efficiency Database System. Accessed September 12, 2022. Available online at cacertappliances.energy.ca.gov.

example, in some cases, the value of rated volume corresponds to the fill volume rounded to the nearest multiple of 10. For other models, however, the difference between rated and fill volume is much greater than any difference due to rounding, ranging from 10 to 50 percent of fill volume.

The volume of the water in a portable electric spa has a significant effect on the energy consumption of the spa, such that any significant difference between fill volume and rated volume for particular portable electric spas suggests that the standby loss determined for those models (based on fill volume) may not be representative of the way those models are advertised or used by consumers (presumably, rated volume). Furthermore, lack of tolerance on the fill level specification may result in variation in the fill level that could reduce repeatability and reproducibility of the test.

To ensure that the volume of water in the portable electric spa during the test is representative of consumer use, DOE is proposing three sets of additional provisions in the proposed test procedure. First, DOE is proposing to exclude from incorporation by reference the definitions of “fill volume” and “rated volume” in ANSI/APSP/ICC-14 2019, and to create a new definition of “fill volume” in section 3.5 of appendix GG. DOE proposes to define “fill volume” as the volume of water held by the portable electric spa when it is filled as specified in section 4.1.4 of appendix GG.

Second, DOE proposes to exclude the spa filling instructions in Section 5.5.2 of ANSI/APSP/ICC-14 2019 and define new filling instructions in section 4.1.4 of appendix GG. While the filling instructions in Section 5.5.2 of ANSI/APSP/ICC-14 2019 rely only on the geometry of the spa, with no reference to the manufacturer’s instructions, the filling instructions proposed in section 4.1.4 of appendix GG would first indicate to fill the spa according to manufacturer’s instructions, and would refer to the

geometry of the spa only for cases in which the manufacturer's instructions do not specify a fill level. Specifically, section 4.1.4 of appendix GG would specify filling the spa with water as follows:

- (a) If the manufacturer's instructions specify a single fill level, fill to that level with a tolerance of ± 0.125 inches.
- (b) If the manufacturer's instructions specify a range of fill levels and not a single fill level, fill to the middle of that range with a tolerance of ± 0.125 inches.
- (c) If the manufacturer's instructions do not specify a fill level or range of fill levels, fill to the halfway point between the bottom of the skimmer opening and the top of the skimmer opening with a tolerance of ± 0.125 inches.
- (d) If the manufacturer's instructions do not specify a fill level or range of fill levels, and there is no wall skimmer, fill to 6.0 inches ± 0.125 inches below the overflow level of the spa.

By defining the fill level for testing to be the same as that specified in the manufacturer's instructions, if available, DOE has tentatively concluded that the proposed fill level is more likely to be representative of consumer use than the fill level specified by ANSI/APSP/ICC-14 2019.

DOE has also tentatively concluded that DOE's specified fill levels for units without manufacturer's fill level instructions are likely to be representative of consumer use for these units. DOE understands that these fill levels are often the levels used for filling portable electric spas for proper operation of the spa, and the levels are often close to the levels specified in manufacturers' instructions.

In each of these instructions, DOE specifies a tolerance of ± 0.125 inches (*i.e.*, one eighth of an inch). DOE's experience testing portable electric spas indicates that achieving a tolerance of one eighth of an inch is feasible and would not introduce undue burden for test laboratories. Furthermore, DOE calculated that a tolerance of ± 0.125 inches would result in a maximum variation in the measured standby loss of less than 1 percent based on typical wall profiles of portable electric spas.

DOE recognizes the possibility that it might be difficult to measure the fill level with a tolerance of ± 0.125 inches if the landmark used to determine fill level is unsteady or a long way from the water level. DOE also recognizes that fill level can affect the energy use of a spa and that a tighter tolerance might be desired to minimize the impact of the tolerance on measured energy use. Therefore, DOE welcomes information on whether any other tolerances on fill level, such as ± 0.0625 inches (*i.e.*, one sixteenth of an inch) or ± 0.25 inches (*i.e.*, one quarter of an inch), would be more appropriate than ± 0.125 inches.

To ensure that the fill volume includes the water in all components of the portable electric spa, DOE is also proposing in section 4.1.4 of appendix GG to follow the manufacturer's instructions for filling the spa with water, connecting and/or priming the pump(s), and starting up the spa. After verifying that the portable electric spa is operating normally and that all water lines are filled, DOE is proposing to power off the spa and adjust the fill level as needed. DOE is proposing to measure the volume of water added to the portable electric spa with a water meter while filling the spa, and to measure any water removed from the spa using a water meter, graduated container, or scale with an accuracy of ± 2 percent of the quantity measured. DOE is proposing that the fill

volume is the volume of water held by the portable electric spa when the spa is filled as specified in section 4.1.4 of appendix GG.

Finally, DOE is proposing in the newly proposed provisions at 10 CFR 429.66 that all representations of fill volume be within 5 gallons of the mean fill volume measured for the sample of the basic model. As discussed, the data on fill volume and rated volume in MAEDbS indicates that some rated volumes correspond to the fill volume rounded to the nearest multiple of 10. The proposed requirement for representations of fill volume to be within 5 gallons of the measured fill volume would allow manufacturers to continue to represent fill volume as a value rounded to the nearest multiple of 10, because any such rounded value would vary by no more than 5 gallons from the measured value. See section III.E.2 of this NOPR for further discussion of DOE's proposals regarding represented values.

DOE requests comment on the proposals to exclude from incorporation by reference the definitions of "fill volume" and "rated volume" in ANSI/APSP/ICC-14 2019, to define a new term for "fill volume," and to specify new filling instructions in appendix GG.

DOE requests comment on its proposal to specify a tolerance of ± 0.125 inches on the defined fill level.

DOE requests comment on whether any other tolerances on fill level, such as ± 0.0625 inches or ± 0.25 inches would be more appropriate than ± 0.125 inches.

DOE requests comment on its proposal to allow represented values of fill volume to be within 5 gallons of the mean fill volume measured for the sample of the basic model.

7. Spa Cover

Portable electric spas are typically covered when not in active use. The standby loss of a portable electric spa is significantly affected by the presence and thermal properties of a spa cover. Section 5.5.5 of ANSI/APSP/ICC-14 2019 requires that the manufacturer's specified cover be used during the test. Section 3 of ANSI/APSP/ICC-14 2019 defines "cover, specified" as the cover that is provided or specified by the manufacturer. However, ANSI/APSP/ICC-14 2019 does not specify how to conduct testing if the manufacturer does not specify a cover. For such cases, differences in laboratory testing decisions regarding the spa cover to be used for testing could result in significant variation in results between laboratories (*i.e.* low reproducibility of test results) and could also produce test results that are not representative of average consumer use.

To ensure reproducible and representative test results, DOE is proposing to exclude Section 5.5.5 of ANSI/APSP/ICC-14 2019 and to exclude the definition in ANSI/APSP/ICC-14 2019 for "cover, specified". DOE is proposing in section 4.1.5 of appendix GG to specify installing the spa cover following the manufacturer's instructions.

Also, as explained in sections III.E.1 and III.E.2 of this NOPR, DOE is proposing in 10 CFR 429.66 that if a basic model is distributed in commerce with multiple covers designated by the spa manufacturer for use with the basic model, a manufacturer must

determine all represented values for that basic model based on the cover that results in the highest standby loss, except that the manufacturer may choose to identify specific individual combinations of spa and cover as additional basic models.

Additionally, DOE is proposing to provide instructions for testing if the manufacturer does not specify a particular cover to be used with a portable electric spa. DOE considered specifying that no cover be used for testing in such cases; however, DOE testing indicates that maintaining the required test conditions throughout the duration the test (*e.g.*, ambient air temperature and water temperature requirements) can be difficult, or in some cases unachievable, if a portable electric spa is tested without a cover. Furthermore, among the wide range of portable electric spa models that DOE has researched, every identified user manual contains instructions or recommendations regarding the use of a cover. In most cases, use of a cover is recommended for safety purposes as well as sanitation (*e.g.* to prevent debris from accumulating in the water). This practice suggests that consumers would be likely to use some type of cover even if the spa manufacturer does not specify a particular cover to be used. For these reasons, DOE has tentatively determined that testing without a cover would not be representative of consumer use and could introduce undue test burden.

DOE considered options for specifying a cover to be used for cases in which no cover is designated by the spa manufacturer. DOE is not aware of any information to suggest what type of cover a consumer would use if the spa manufacturer does not specify a particular cover to be used. In such cases, DOE presumes that some consumers may purchase a high-performing spa cover from a third-party supplier; whereas other consumers may opt to use a low-cost, minimally protective cover that would prevent debris from entering the spa but that would not provide substantial insulative properties

(e.g. a tarp or thin sheet of plastic). For such consumers opting to use a low-cost minimally insulative cover, a representation of spa energy use based on testing with a thermally insulative cover would not be representative of the energy use experienced by such consumers.

Given that some consumers may opt to use a low-cost, minimally insulative cover if the spa manufacturer does not specify use of a particular cover, DOE is proposing that if no cover is designated by the spa manufacturer for use with the portable electric spa, the portable electric spa be covered during testing with a material that would be low-cost, widely available, would prevent debris from entering the spa, be durable enough for repeated use, but that would provide no substantive insulative properties. DOE tentatively finds that a material with these properties would be feasible for consumer use as a low-cost spa cover. Specifically, DOE is proposing to specify in section 4.1.5 of appendix GG the following: If no cover is designated by the spa manufacturer for use with the portable electric spa, cover the spa with a single layer of 6 mil thickness (0.006 inches; 0.15 mm) plastic film. Cut the plastic to cover the entire top surface of the spa and extend over each edge of the spa approximately 6 inches below the top surface of the spa. Use fasteners or weights to keep the plastic in place during the test, but do not seal the edges of the plastic to the spa (by using tape, for example).

DOE market research indicates that 6 mil thickness plastic film is widely available at home improvement retailers. In addition, DOE testing indicates that covering a portable electric spa during testing with a thin plastic material, such as the material proposed, would be sufficient to maintain the required ambient air temperature and water temperature test conditions throughout the duration the test.

DOE notes that this proposal to test portable electric spas for which the manufacturer does not designate a particular spa cover is conceptually similar to DOE's testing approach for central air conditioners ("CACs"), which typically consist of both an indoor unit and an outdoor unit. The measured efficiency of a CAC is dependent upon the performance characteristics of both the indoor unit and outdoor unit. For CACs sold as an outdoor unit with no matched indoor unit, the DOE test procedure requires that the outdoor unit be tested with an indoor unit that is representative of the least efficient unit with which it would typically be installed. (*see* 10 CFR 429.16, Table 1 and section (b)(2)(i), and 10 CFR part 430, subpart B, appendix M1, section 2.2.e)

However, DOE also notes that this proposal to test portable electric spas for which the manufacturer does not designate a particular spa cover may not be applicable when the spa manufacturer specifically designates a model of portable electric spa for use without a cover or with "no cover" as one of multiple cover options designated by the spa manufacturer. In both of these cases, testing the spa with a cover made of 6 mil plastic might not be representative of field use. Therefore, in such cases it might be more representative to test the spa without a cover.

DOE requests comment on its proposed requirements for testing a portable electric spa that does not have a cover designated for use by the spa manufacturer.

DOE requests comment on whether manufacturers would ever designate a portable electric spa model to be used without a cover or designate a "no cover" option. If so, DOE requests comment on how such a spa should be tested to determine the highest standby loss (e.g. should it be tested with a 6 mil plastic cover, or tested with no cover).

8. Air Temperature Measurement Location

Section 5.6.3 of ANSI/APSP/ICC-14 2019 requires that ambient air temperature be measured at one point located 12 to 18 inches above the level of the spa cover and a minimum of 8 inches from the wall of the chamber. The temperature probe will be positioned and out of direct airflow from the circulation fan. ANSI/APSP/ICC-14 2019 does not provide any further requirements on the location of the ambient air temperature measurement point, such that it would be possible in a large chamber for the measurement point to be located beyond the immediate proximity of the portable electric spa. This lack of direction presents the possibility that the temperature could be taken at a location in the chamber with an ambient temperature that is different than the ambient temperature immediately around the portable electric spa.

To avoid this potential issue, DOE is proposing further requirements on the horizontal location of the ambient air temperature measurement point. DOE understands that it is common for ambient air temperature to be measured directly above the center of the portable electric spa. Therefore, DOE is proposing in section 4.1.6 of appendix GG that the ambient air temperature measurement point specified in Section 5.6.3 of ANSI/APSP/ICC-14 2019 must be located above the center of the portable electric spa. DOE has tentatively concluded that this proposal will ensure that the ambient air temperature is measured close to the portable electric spa and in the same general location each time, thereby increasing test repeatability, reproducibility, and representativeness.

DOE requests comment on the proposal to require that ambient air temperature be measured above the center of the portable electric spa.

9. Water Temperature Settings

The definition of standby mode in ANSI/APSP/ICC-14 2019 indicates that water temperature settings may be adjusted to meet the test conditions²⁸. ANSI/APSP/ICC-14 2019 does not specify, however, whether adjustments to the water temperature settings can be made during the test. As discussed in section III.C.2 of this NOPR, users typically leave a portable electric spa at the desired water temperature setting while the spa is operating in default operation mode with the cover on. Based on these consumer usage patterns, water temperature adjustments during a test would be unrepresentative of field use. In addition, the permitting of water temperature setting adjustments during a test could influence the outcome of the test.

For these reasons, DOE has tentatively concluded that water temperature setting adjustments would not be appropriate during the test and that further specification is required to ensure repeatable, reproducible, and representative test results. Therefore, DOE proposes in section 4.2.2 of appendix GG to specify that portable electric spa water temperature settings be adjusted to meet the test requirements, but that spa water temperature settings must not be adjusted between the start of the stabilizing period specified in Section 5.6.1 of ANSI/APSP/ICC-14 2019 and the end of the test period specified in Section 5.6.4.7 of ANSI/APSP/ICC-14 2019.

DOE requests comment on its proposed requirement that water temperature settings must not be adjusted between the start of the stabilizing period and the end of the test period.

²⁸ The definition of standby mode in Section 3 of ANSI/APSP/ICC-14 2019 is as follows: All settings at default as shipped by the manufacturer, except water temperature, which may be adjusted to meet the test conditions. No manual operations are enabled.

10. Water Temperature Requirements

The sub-sections within Section 5.6.1 of ANSI/APSP/ICC-14 2019 specify the range of water temperatures that are allowed during the test based on the capabilities of the portable electric spa.²⁹ DOE understands that these requirements apply to every temperature measurement taken during the test. However, some consumer product test procedures specify requirements for the average temperature during a test instead of the individual temperature measurements.³⁰ The phrasing used in Section 5.6.1 of ANSI/APSP/ICC-14 2019 could be interpreted to refer to requirements on the average temperature during the test instead of every temperature measurement taken during the test. This wording creates the possibility that the range of water temperatures could vary between tests based on a laboratory's interpretation of whether the water temperature requirements apply to the average temperature or each individual measurement.

To ensure that the water temperature requirements are interpreted consistently and repeatably, DOE is proposing to specify explicitly in section 4.2.3 of appendix GG that each individual water temperature measurement taken during the stabilization period and test period must meet the applicable water temperature requirements specified in Section 5.6.1 of ANSI/APSP/ICC-14 2019. DOE conducted investigative testing and found that this requirement can be met in typical spa operation.

²⁹ For example, Section 5.6.1.1 states that for exercise spas or the exercise portion of a combination spa, that are capable of maintaining a minimum water temperature of 100 °F (38 °C) for the duration of the test, the spa shall be tested at 102 °F +/- 2 °F (39 °C +/- 1 °C) and maintain a minimum water temperature of 100 °F (38 °C) for the duration of the test.

³⁰ For example, the test procedure for refrigerators and refrigerator-freezers at appendix A to subpart B of part 430 contains several requirements on the average temperature of the compartment(s) within the appliance.

DOE requests comment on its proposal to state explicitly that each individual water temperature measurement taken during the stabilization period and test period must meet the applicable water temperature requirements.

11. Standby Loss Calculation

Section 5.7 of ANSI/APSP/ICC-14 2019 contains calculations for normalized standby power. This includes calculating the measured standby power and normalizing that standby power to a normalized temperature difference between the water in the spa and the ambient air. As discussed in section III.C.3 of this NOPR, DOE is proposing to use the term “standby loss” instead of “normalized standby power.” In addition, as discussed in section III.D.3 of this NOPR, DOE is proposing to specify a representative ambient air temperature of 56 °F. Because these proposals are inconsistent with the calculations defined in Section 5.7 of ANSI/APSP/ICC-14 2019, DOE is proposing to exclude Section 5.7 of ANSI/APSP/ICC-14 2019 from incorporation by reference and to specify a new standby loss calculation in section 4.3 of appendix GG. DOE is proposing for this section to use the term “standby loss” instead of “normalized standby power” and to use normalized temperature differences that are consistent with DOE’s proposed representative ambient air temperature of 56 °F.

In determining the normalized temperature differences, DOE also is proposing to use a different approach to calculate the normalized temperature differences than the approach used in ANSI/APSP/ICC-14 2019. In Sections 5.7.2 and 5.7.3 of ANSI/APSP/ICC-14 2019, the normalized temperature differences are equal to the minimum of the allowed water temperature range (*i.e.*, 100 °F or 85 °F) minus the maximum of the allowed ambient air temperature range (*i.e.* 63 °F), resulting in a normalized temperature difference of 37 °F for units tested at a water temperature of 102

$^{\circ}\text{F} \pm 2^{\circ}\text{F}$, and a normalized temperature difference of 22°F for units tested at a water temperature of $87^{\circ}\text{F} \pm 2^{\circ}\text{F}$. DOE has tentatively concluded that this approach may not be representative of an average use cycle, because it normalizes standby loss to the minimum expected temperature difference resulting from the two defined ranges. DOE has tentatively concluded that a more representative result would be obtained by calculating the normalized temperature difference as the difference between the midpoint of the allowable water temperature and ambient air temperature ranges.

Therefore, DOE is proposing to define a normalized temperature difference of 46°F (*i.e.*, $102^{\circ}\text{F} - 56^{\circ}\text{F}$) for units tested at a water temperature of $102^{\circ}\text{F} \pm 2^{\circ}\text{F}$, and a normalized temperature difference of 31°F (*i.e.*, $87^{\circ}\text{F} - 56^{\circ}\text{F}$) for units tested at a water temperature of $87^{\circ}\text{F} \pm 2^{\circ}\text{F}$.

DOE requests comment on the proposed standby loss calculations, including the method used to calculate normalized temperature differences based on the midpoint of the allowable temperature ranges. DOE requests comment on its tentative conclusion that normalizing standby loss to the midpoint of the allowable temperature ranges would produce test results that are more representative than normalizing standby loss to the minimum expected temperature difference between the allowable ranges.

E. Represented Values Provisions

For determining the proposed represented values (*i.e.*, standby loss and fill volume) for each basic model, DOE proposes that manufacturers must use a statistical sampling plan of tested data. The following sections discuss the concept of a basic model as well as DOE's proposed sampling plan.

1. Basic Model

In the course of regulating consumer products, DOE has developed the concept of a “basic model” to determine the specific product or equipment configuration(s) to which the regulations would apply. Specifically, in DOE’s existing definition of basic model at 10 CFR 430.2, basic model means all units of a given type of covered product (or class thereof) manufactured by one manufacturer that have the same primary energy source and have essentially identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.³¹

DOE has reviewed this definition of “basic model” and tentatively determined that the general definition is appropriate for portable electric spas. For the purposes of applying the proposed portable electric spa regulations, DOE is proposing to rely on the definition of “basic model” as currently defined at 10 CFR 430.2. Application of the current definition of “basic model” would allow manufacturers of portable electric spas to group similar models within a basic model to minimize testing burden, while ensuring that key variables that differentiate portable electric spa energy performance or utility are maintained as separate basic models. As proposed, manufacturers would be required to test only a representative number of units of a basic model in lieu of testing every individual model they manufacture, and individual models of portable electric spas would be permitted to be grouped under a single basic model so long as all grouped models have the same representative energy performance, which is representative of the unit with the highest standby loss.

³¹ The definition of “basic model” in 10 CFR 430.2 also includes several product-specific paragraphs that are not relevant to portable electric spas.

For example, characteristics that might distinguish basic models of a portable electric spa might be the amount and location of insulation or reflective material in the spa cabinet, and the configuration of the spa's plumbing, especially including whether the spa uses a dedicated-purpose pump for circulation, such that the standby loss of the spa can be reasonably expected to differ as a result. DOE understands that many available features on portable electric spas, such as varying colors of exterior cabinetry or acrylic shell, do not affect energy usage. Therefore, features such as these would not constitute the basis for establishing a distinct basic model.

Also, as explained in section III.E.2 of this NOPR, DOE is proposing in 10 CFR 429.66 that if a basic model is distributed in commerce with multiple covers designated by the spa manufacturer for use with the basic model, a manufacturer must determine all represented values for that basic model based on the cover that results in the highest standby loss, except that the manufacturer may choose to identify specific individual combinations of spa and cover as additional basic models.

DOE requests comment on the proposed applicability of the definition of "basic model" at 10 CFR 430.2 to portable electric spas.

2. Represented Values

DOE provides requirements for represented values and sampling plans for all covered products in subpart B to part 429. The purpose of a statistical sampling plan is to provide a method to determine represented values of energy- and non-energy-related metrics for each basic model.

DOE is proposing to create a new section at 10 CFR 429.66 for portable electric spas and to require that, for each basic model, a sample of sufficient size must be

randomly selected and tested to ensure that any represented value of standby loss or other measure of energy consumption of a basic model for which customers would favor lower values is greater than or equal to the higher of the following two values:

(1) The mean of the sample, where:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

and \bar{x} is the sample mean, n is the number of samples, and x_i is the maximum of the i^{th} sample;

Or,

(2) The upper 95 percent confidence limit (UCL) of the true mean divided by 1.05, where:

$$UCL = \bar{x} + t_{0.95} \left(\frac{s}{\sqrt{n}} \right)$$

and \bar{x} is the sample mean, s is the sample standard deviation, n is the number of samples, and $t_{0.95}$ is the t statistic for a 95 percent one-tailed confidence interval with $n-1$ degrees of freedom (from appendix A of subpart B of part 429).

DOE is also proposing in 10 CFR 429.66 that the represented value of standby loss must be a whole number of watts.

In addition to specifying sampling provisions pertaining to representations of standby loss, DOE is proposing that the represented value of fill volume must be a whole number of gallons that is within 5 gallons of the mean of the fill volumes measured for

the units in the sample used to determine the represented value of standby loss. As discussed in section III.D.6 of this NOPR, DOE is proposing a tolerance of 5 gallons on the represented value of fill volume to enable manufacturers to make representations of fill volume values that are multiples of 10 in marketing materials, consistent with current practice.

Portable electric spas are often available with more than one model of cover, and the characteristics of the cover can significantly affect measured standby loss. DOE is proposing in 10 CFR 429.66 that if a basic model is distributed in commerce with multiple covers designated by the spa manufacturer for use with the basic model, a manufacturer must determine all represented values for that basic model based on the cover that results in the highest standby loss, except that the manufacturer may choose to identify specific individual combinations of spa and cover as additional basic models. DOE is also proposing that if a basic model is distributed in commerce with no cover designated by the spa manufacturer for use with the basic model, a manufacturer must determine all represented values for that basic model by testing as specified in section 4.1.5.2 of appendix GG to subpart B of part 430.

DOE requests comment on the proposed statistical sampling procedures and representations requirements for portable electric spas.

DOE requests comment on the proposal that represented values be based on testing with the designated cover that results in the highest standby loss; or by testing as specified in section 4.1.5.2 of appendix GG to subpart B of part 430 if there is no designated cover.

F. Representations of Energy Efficiency or Energy Use

Manufacturers of portable electric spas within the scope of the proposed portable electric spa test procedure, if finalized, would be required to use the test procedure proposed in this NOPR when making representations about the energy efficiency or energy use of their products. Specifically, 42 U.S.C. 6293(c) provides that “no manufacturer...may make any representation...respecting the energy consumption of such product or cost of energy consumed by such product, unless such product has been tested in accordance with such test procedure and such representation fairly discloses the results of such testing.”

If made final, the proposed test procedure would not require manufacturers to test the subject portable electric spas until such time as compliance is required with any future applicable energy conservation standards that are established. However, beginning 180 days after publication of a final rule that adopts a test procedure for portable electric spas, any voluntary representations as to the energy efficiency or energy use of a subject portable electric spa would be required to be based on the DOE test procedure. (42 U.S.C. 6293(c)(2))

G. Test Procedure Costs and Harmonization

1. Test Procedure Costs and Impact

In this NOPR, DOE proposes to establish a test procedure for portable electric spas by incorporating by reference the test methods established in ANSI/APSP/ICC-14 2019, “American National Standard for Portable Electric Spa Energy Efficiency,” with certain modifications and additions. This NOPR also contains proposals regarding representation provisions for portable electric spas. The following paragraphs discuss DOE’s analysis of testing costs associated with this proposal.

As discussed previously, DOE proposes to incorporate by reference the test method contained in certain applicable Sections of ANSI/APSP/ICC-14 2019 as the basis for the portable electric spas test procedure. DOE also proposes modifications and additions to ANSI/APSP/ICC-14 2019 to ensure repeatability, reproducibility, and representativeness of test results. These proposals are discussed in sections III.D.1 through III.D.11 of this NOPR.

Because DOE's proposed test procedure would largely be consistent with the current industry test method ANSI/APSP/ICC-14 2019, DOE has tentatively determined that the proposal in this NOPR is unlikely to significantly increase burden in comparison to performing testing consistent with ANSI/APSP/ICC-14 2019. In the following paragraphs, DOE estimates the testing costs associated with the proposed test procedure for portable electric spas.

By adopting industry standards, DOE has tentatively determined that the proposals included in this NOPR would establish a DOE test procedure that is reasonably designed to produce test results which reflect energy efficiency and energy use of portable electric spas during a representative average use cycle and that would not be unduly burdensome for manufacturers to conduct. DOE is presenting its estimates for the costs associated with testing products consistent with the requirements of the proposed test procedure, as would be required to certify compliance with any future energy conservation standard.

DOE estimates the per-test cost for third-party laboratory testing of portable electric spas according to the current industry consensus test procedure ANSI/APSP/ICC-14 2019 to be \$5,000 for standard and inflatable spas, \$9,000 for exercise spas, and

\$11,000 for combination spas. DOE estimates the per-test cost for third-party lab testing according to the proposed DOE test procedure to be \$5,150 for standard and inflatable spas, \$9,150 for exercise spas, and \$11,150 for combination spas. This slight increase between the estimates for ANSI/APSP/ICC-14 2019 and the proposed DOE test procedure is due to the potential that some testing labs may be required to install conditioning equipment to comply with the proposed lower ambient temperature requirement. DOE estimates the cost of such equipment to be approximately \$150.³²

DOE notes that the testing burden per manufacturer will vary depending on current testing practices. ANSI/APSP/ICC-14 2019 is the generally accepted industry test procedure. As such, many manufacturers are already testing to ANSI/APSP/ICC-14 2019 for certification in California and other regulated markets.

DOE requests comment on its estimates of the costs associated with performing testing according to the test procedure proposals in this NOPR. DOE requests comment on its tentative determination that the proposed DOE test procedure, if finalized, would not be unduly burdensome for manufacturers to conduct.

2. Harmonization with Industry Standards

DOE's established practice is to adopt relevant industry standards as DOE test procedures unless such methodology would be unduly burdensome to conduct or would not produce test results that reflect the energy efficiency, energy use, water use (as specified in EPCA) or estimated operating costs of that product during a representative

³² DOE engaged in correspondence with multiple third-party test labs, and with portable electric spa manufacturers. The costs above reflect DOE's high end estimates of potential testing costs. DOE researched the cost of conditioning systems that may be required for test labs to purchase for adapting current test chambers to comply with the DOE proposed test procedure, and the cost of their installation. DOE amortized the combined cost of purchase and installation per spa such that the upgrade costs to a test lab would be recovered in one calendar year.

average use cycle or period of use. Section 8(c) of appendix A of 10 CFR part 430, subpart C. In cases where the industry standard does not meet EPCA's statutory criteria for test procedures, DOE will make modifications through the rulemaking process to these standards for the DOE test procedure.

The industry standard DOE proposes to incorporate by reference via amendments described in this notice is discussed in further detail in section III.D.1 of this document.

DOE requests comments on the benefits and burdens of the proposed updates and additions to the industry standard referenced in the test procedure for portable electric spas.

H. Compliance Date

If DOE amends a test procedure, EPCA prescribes that all representations of energy efficiency and energy use, including those made on marketing materials and product labels, must be made in accordance with that amended test procedure, beginning 180 days after publication of such a test procedure final rule in the *Federal Register*. (42 U.S.C. 6293(c)(2)) To the extent the test procedure proposed in this document is required only for the evaluation and issuance of efficiency standards, use of the test procedure, if finalized, would not be required until the compliance date of such standards. Section 8(e) of appendix A, 10 CFR part 430, subpart C.

If DOE were to publish a new test procedure, EPCA provides an allowance for individual manufacturers to petition DOE for an extension of the 180-day period if the manufacturer may experience undue hardship in meeting the deadline. (42 U.S.C. 6293(c)(3)) To receive such an extension, petitions must be filed with DOE no later than

60 days before the end of the 180-day period and must detail how the manufacturer will experience undue hardship. (*Id.*)

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866 and 13563

Executive Order (“E.O.”) 12866, “Regulatory Planning and Review,” as supplemented and reaffirmed by E.O. 13563, “Improving Regulation and Regulatory Review,” 76 FR 3821 (Jan. 21, 2011), requires agencies, to the extent permitted by law, to (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. DOE emphasizes as well that E.O. 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, the Office of Information and Regulatory Affairs (“OIRA”) in the Office of Management and Budget (“OMB”) has emphasized that such techniques may include identifying changing future compliance costs that might result from technological

innovation or anticipated behavioral changes. For the reasons stated in the preamble, this proposed regulatory action is consistent with these principles.

Section 6(a) of E.O. 12866 also requires agencies to submit “significant regulatory actions” to OIRA for review. OIRA has determined that this proposed regulatory action does not constitute a “significant regulatory action” under section 3(f) of E.O. 12866. Accordingly, this proposed action was not submitted to OIRA for review under E.O. 12866.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis (“IRFA”) for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by Executive Order 13272, “Proper Consideration of Small Entities in Agency Rulemaking,” 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel’s website: www.energy.gov/gc/office-general-counsel.

The following sections detail DOE’s IRFA for this test procedure rulemaking.

1. Description of Reasons Why Action is Being Considered

Portable electric spas are factory-built hot tubs or spas that are intended for the immersion of people in heated, temperature-controlled water that is circulated in a closed system. Currently, portable electric spas are not subject to DOE test procedures or

energy conservation standards. DOE is publishing this NOPR in accordance with the statutory authority in EPCA. In this NOPR, DOE is proposing to establish a new test procedure for portable electric spas.

2. Objective of, and Legal Basis for, Rule

EPCA authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B33 of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, which sets forth a variety of provisions designed to improve energy efficiency for certain products, referred to as “covered products.” In addition to specifying a list of consumer products that are covered products, EPCA contains provisions that enable the Secretary of Energy to classify additional types of consumer products as covered products.

Under 42 U.S.C. 6293, EPCA sets forth the criteria and procedures DOE must follow when prescribing or amending test procedures for covered products. Specifically, EPCA provides that DOE may, in accordance with certain requirements, prescribe test procedures for any consumer product classified as a covered product under section 6292(b). (42 U.S.C. 6293(b)(1)(B)) EPCA requires that any test procedures prescribed or amended under this section shall be reasonably designed to produce test results which measure energy efficiency, energy use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use and not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

³³ For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

3. Description and Estimate of Small Entities Regulated

DOE uses the Small Business Administration (“SBA”) small business size standards to determine whether manufacturers qualify as “small businesses,” which are listed by the North American Industry Classification System (“NAICS”).³⁴ The SBA considers a business entity to be a small business if, together with its affiliates, it employs less than a threshold number of workers specified in 13 CFR part 121.

Portable electric spa manufacturers, who produce the products covered by this rule, are classified under NAICS code 333414, “Heating Equipment (except Warm Air Furnaces) Manufacturing.” In 13 CFR 121.201, the SBA sets a threshold of 500 employees or fewer for an entity to be considered as a small business for this category. This employee threshold includes all employees in a business’s parent company and any other subsidiaries.

DOE reviewed the test procedure proposed in this NOPR under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003. The Department conducted a focused inquiry into small business manufacturers of the products covered by this rulemaking. DOE used publicly available information to identify potential small businesses that manufacture portable electric spas domestically. DOE identified manufacturers using MAEDbS and web searches. Additionally, DOE used publicly-available information and subscription-based market research tools (*e.g.*, reports from Dun & Bradstreet³⁵). As a result of this inquiry, DOE identified a total of 28 companies that are manufacturers of portable electric spas in the United States. DOE

³⁴ Available at: www.sba.gov/document/support-table-size-standards.

³⁵ Dun & Bradstreet reports are available at: app.dnbhoovers.com (last accessed September 1, 2021).

screened out companies that do not meet the definition of a “small business” or are foreign-owned and operated. Of these, DOE identified 14 potential small businesses.

4. Description and Estimate of Compliance Requirements

In this NOPR, DOE proposes to establish a test procedure for portable electric spas in a new appendix GG to subpart B of part 430. DOE proposes to incorporate by reference the test methods established in ANSI/APSP/ICC-14 2019, “American National Standard for Portable Electric Spa Energy Efficiency,” with certain exceptions and additions. The proposed test method produces a measure (“standby loss”) of the energy consumption of portable electric spas that represents the average power consumed by the spa, normalized to a standard temperature difference between the ambient air and the water in the spa, while the cover is on and the product is operating in its default operation mode.

DOE’s proposed test procedure would be largely consistent with the current industry consensus test method ANSI/APSP/ICC-14 2019. As such DOE anticipates the proposal in this NOPR to be unlikely to significantly increase burden given that DOE is referencing the prevailing industry test procedure. Furthermore, compliance with the proposed test procedure would not be required until compliance is required with any energy conservation standards DOE establishes for portable electric spas or if a manufacturer chooses to make voluntary representations.

DOE recognizes that energy conservation standards related to portable electric spas may be proposed or promulgated in the future and manufacturers would then be required to test all covered products in accordance with the proposed test procedure once compliance with any standard is required. Therefore, DOE is presenting the estimated

maximum costs associated with testing consistent with the requirements of the test procedure, as would be required to comply with any future energy conservation standards for portable electric spas.

DOE understands that most portable electric spa manufacturers elect to test units at a third-party testing facility. DOE estimates that the per basic model test costs for third-party lab testing to be \$5,150 for standard and inflatable spas, \$9,150 for exercise spas, and \$11,150 for combination spas. Also, DOE estimates the impacts based on estimated basic model counts and company revenue. Table IV.1 summarizes DOE's estimates for the identified small businesses. On average, testing costs represent less than 1 percent of annual revenue for a typical small business.

Table IV.1 Estimated Testing Burden for Small, Domestic Manufacturers

Manufacturer	Estimated Testing Burden (2022\$mm)	Annual Revenue (2022\$mm)	Percent of Annual Revenue (%)
Manufacturer A	0.08	51.4	0.2
Manufacturer B	0.01	10.3	0.1
Manufacturer C	0.06	29.6	0.2
Manufacturer D	0.03	0.600	4.3
Manufacturer E	0.01	111	0.0
Manufacturer F	0.14	62.0	0.2
Manufacturer G	0.17	27.0	0.7
Manufacturer H	0.06	20.0	0.3
Manufacturer I	0.07	7.52	1.0
Manufacturer J	0.02	23.7	0.1
Manufacturer K	0.02	40.0	0.1
Manufacturer L	0.05	12.7	0.4
Manufacturer M	0.03	7.73	0.4
Manufacturer N	0.01	2.19	0.5

DOE requests comment on the number of small businesses DOE identified. DOE also requests comment on the potential cost estimates for each small business identified.

5. Duplication, Overlap, and Conflict with Other Rules and Regulations

DOE is not aware of any rules or regulations that duplicate, overlap, or conflict with the proposed rule being considered.

6. Significant Alternatives to the Rule

The discussion in the previous section analyzes impacts on small businesses that would result from DOE's proposed test procedure, if finalized. In reviewing alternatives to the proposed test procedure, DOE considered the option of not establishing a Federal test procedure for portable electric spas. While not establishing a test procedure would reduce the burden on small businesses, DOE must use test procedures to determine whether the products comply with relevant standards promulgated under EPCA. (42 U.S.C. 6295(s)) Because establishing a test procedure for portable electric spas is necessary prior to establishing energy conservation standards, DOE tentatively concludes that establishing the test procedure, as proposed in this NOPR, supports DOE's authority to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A))

The Department has tentatively determined that there are no better alternatives than the test procedure proposed in this NOPR, in terms of both meeting the agency's objectives and reducing burden. Additionally, manufacturers subject to DOE's test procedures may apply to DOE's Office of Hearings and Appeals for exception relief under certain circumstances. Manufacturers should refer to 10 CFR part 430, subpart E, and 10 CFR part 1003 for additional details.

C. Review Under the Paperwork Reduction Act of 1995

Although no energy conservation standards have been established for portable electric spas as of the publication of this NOPR, manufacturers of portable electric spas would need to certify to DOE that their products comply with any potential future applicable energy conservation standards. To certify compliance, manufacturers must first obtain test data for their products according to the DOE test procedures, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including portable electric spas. (*See generally* 10 CFR part 429.) The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (“PRA”). This requirement has been approved by OMB under OMB control number 1910-1400. Public reporting burden for the certification is estimated to average 35 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

DOE is not proposing certification or reporting requirements for portable electric spas in this NOPR. Instead, DOE may consider proposals to establish certification requirements and reporting for portable electric spas under a separate rulemaking regarding appliance and equipment certification. DOE will address changes to OMB Control Number 1910-1400 at that time, as necessary.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of

information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

In this NOPR, DOE proposes a test procedure that it expects will be used to develop and implement future energy conservation standards for portable electric spas. DOE has determined that this proposed rule falls into a class of actions that are categorically excluded from review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and DOE's implementing regulations at 10 CFR part 1021. Specifically, DOE has determined that adopting test procedures for measuring energy efficiency of consumer products and industrial equipment is consistent with activities identified in 10 CFR part 1021, appendix A to subpart D, sections A5 and A6. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

E. Review Under Executive Order 13132

Executive Order 13132, "Federalism," 64 FR 43255 (Aug. 4, 1999) imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. The Executive order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has

examined this proposed rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this proposed rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297(d)) No further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

Regarding the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, “Civil Justice Reform,” 61 FR 4729 (Feb. 7, 1996), imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity, (2) write regulations to minimize litigation, (3) provide a clear legal standard for affected conduct rather than a general standard, and (4) promote simplification and burden reduction. Section 3(b) of Executive Order 12988 specifically requires that executive agencies make every reasonable effort to ensure that the regulation (1) clearly specifies the preemptive effect, if any, (2) clearly specifies any effect on existing Federal law or regulation, (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction, (4) specifies the retroactive effect, if any, (5) adequately defines key terms, and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the

extent permitted by law, the proposed rule meets the relevant standards of Executive Order 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (“UMRA”) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Pub. L. 104-4, sec. 201 (codified at 2 U.S.C. 1531). For a proposed regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed “significant intergovernmental mandate,” and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect small governments. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820; also available at www.energy.gov/gc/office-general-counsel. DOE examined this proposed rule according to UMRA and its statement of policy and determined that the rule contains neither an intergovernmental mandate, nor a mandate that may result in the expenditure of \$100 million or more in any year, so these requirements do not apply.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105-277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This proposed rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

DOE has determined, under Executive Order 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (March 18, 1988), that this proposed regulation would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for agencies to review most disseminations of information to the public under guidelines established by each agency pursuant to general guidelines issued by OMB. OMB’s guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE’s guidelines were published at 67 FR 62446 (Oct. 7, 2002). Pursuant to OMB Memorandum M-19-15, Improving Implementation of the Information Quality Act (April 24, 2019), DOE published updated guidelines which are available at www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf. DOE has reviewed this proposed rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OMB a Statement of Energy Effects for any proposed significant energy action. A “significant energy action” is defined as any action by an agency that promulgated or is expected to lead to promulgation of a final rule, and that (1) is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

The proposed regulatory action to establish a test procedure for measuring the energy efficiency of portable electric spas is not a significant regulatory action under Executive Order 12866. Moreover, it would not have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as a significant energy action by the Administrator of OIRA. Therefore, it is not a significant energy action, and, accordingly, DOE has not prepared a Statement of Energy Effects.

L. Review Under Section 32 of the Federal Energy Administration Act of 1974

Under section 301 of the Department of Energy Organization Act (Pub. L. 95–91; 42 U.S.C. 7101), DOE must comply with section 32 of the Federal Energy Administration Act of 1974, as amended by the Federal Energy Administration Authorization Act of 1977. (15 U.S.C. 788; “FEAA”) Section 32 essentially provides in

relevant part that, where a proposed rule authorizes or requires use of commercial standards, the notice of proposed rulemaking must inform the public of the use and background of such standards. In addition, section 32(c) requires DOE to consult with the Attorney General and the Chairman of the Federal Trade Commission (“FTC”) concerning the impact of the commercial or industry standards on competition.

The proposed test procedure for portable electric spas would incorporate testing methods contained in certain sections of the following commercial standard: Pool & Hot Tub Alliance ANSI/APSP/ICC-14 2019, “American National Standard for Portable Electric Spa Energy Efficiency”. DOE has evaluated these standards and is unable to conclude whether they fully comply with the requirements of section 32(b) of the FEAA (*i.e.*, whether it was developed in a manner that fully provides for public participation, comment, and review). DOE will consult with both the Attorney General and the Chairman of the FTC concerning the impact of this test procedure on competition, prior to prescribing a final rule.

M. Description of Materials Incorporated by Reference

In this NOPR, DOE proposes to incorporate by reference ANSI/APSP/ICC-14 2019. The proposed incorporated test standard measures standby loss as the average power required to maintain the spa’s water at a ready-to-use temperature for 72 hours, while the spa sits covered in a controlled-temperature environment. Specifically, this NOPR proposes to incorporate significant portions of section 3, “Definitions”, section 5, “Test Methods”, and appendix A, “Minimum Chamber Requirements”.

Copies of ANSI/APSP/ICC-14 2019 may be purchased from the Pool & Hot Tub Alliance, 2111 Eisenhower Avenue, Suite 500, Alexandria, VA 22314 (www.phtha.org), or by going to webstore.ansi.org/Standards/APSP/ansiapspicc142019.

V. Public Participation

A. Participation in the Webinar

The time and date of the webinar meeting are listed in the **DATES** section at the beginning of this document. Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE's website:

www.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=79.

Participants are responsible for ensuring their systems are compatible with the webinar software.

B. Procedure for Submitting Prepared General Statements for Distribution

Any person who has an interest in the topics addressed in this proposed rule, or who is representative of a group or class of persons that has an interest in these issues, may request an opportunity to make an oral presentation at the webinar. Such persons may submit to ApplianceStandardsQuestions@ee.doe.gov. Persons who wish to speak should include with their request a computer file in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format that briefly describes the nature of their interest in this rulemaking and the topics they wish to discuss. Such persons should also provide a daytime telephone number where they can be reached.

C. Conduct of the Webinar

DOE will designate a DOE official to preside at the webinar/public meeting and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336 of EPCA (42 U.S.C. 6306). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the webinar/public meeting. There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. After the webinar/public meeting and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The webinar will be conducted in an informal, conference style. DOE will present a general overview of the topics addressed in this rulemaking, allow time for prepared general statements by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will permit, as time permits, other participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of participants concerning other matters relevant to this rulemaking. The official conducting the webinar/public meeting will accept additional comments or questions from those attending, as time permits. The presiding official will announce any

further procedural rules or modification of the above procedures that may be needed for the proper conduct of the webinar/public meeting.

A transcript of the webinar will be included in the docket, which can be viewed as described in the *Docket* section at the beginning of this proposed rule. In addition, any person may buy a copy of the transcript from the transcribing reporter.

D. Submission of Comments

DOE will accept comments, data, and information regarding this proposed rule before or after the public meeting, but no later than the date provided in the **DATES** section at the beginning of this proposed rule.³⁶ Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document.

Submitting comments via www.regulations.gov. The www.regulations.gov webpage will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last name, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information

³⁶ DOE has historically provided a 75-day comment period for test procedure NOPRs pursuant to the North American Free Trade Agreement, U.S.-Canada-Mexico (“NAFTA”), Dec. 17, 1992, 32 I.L.M. 289 (1993); the North American Free Trade Agreement Implementation Act, Pub. L. 103-182, 107 Stat. 2057 (1993) (codified as amended at 10 U.S.C.A. 2576) (1993) (“NAFTA Implementation Act”); and Executive Order 12889, “Implementation of the North American Free Trade Agreement,” 58 FR 69681 (Dec. 30, 1993). However, on July 1, 2020, the Agreement between the United States of America, the United Mexican States, and the United Canadian States (“USMCA”), Nov. 30, 2018, 134 Stat. 11 (*i.e.*, the successor to NAFTA), went into effect, and Congress’s action in replacing NAFTA through the USMCA Implementation Act, 19 U.S.C. 4501 *et seq.* (2020), implies the repeal of E.O. 12889 and its 75-day comment period requirement for technical regulations. Thus, the controlling laws are EPCA and the USMCA Implementation Act. Consistent with EPCA’s public comment period requirements for consumer products, the USMCA only requires a minimum comment period of 60 days. Consequently, DOE now provides a 60-day public comment period for test procedure NOPRs.

to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (“CBI”)). Comments submitted through *www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via email, hand delivery/courier, or postal mail. Comments and documents submitted via email, hand delivery/courier, or postal mail also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying

documents. Instead, provide your contact information on a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via postal mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles (“faxes”) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters’ names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked “confidential” including all the information believed to be confidential, and one copy of the document marked “non-confidential” with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

E. Issues on Which DOE Seeks Comment

Although DOE welcomes comments on any aspect of this proposal, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

- (1) DOE requests comment on its proposal for the scope of the test procedure to include all products that meet the definition of portable electric spa. DOE requests comment on whether any additional products should be included within the scope of the DOE test procedure. DOE requests comment on whether any products that meet the definition of portable electric spa should be excluded from the scope of the DOE test procedure, and, if so, on what basis.
- (2) DOE requests comment on whether the definitions for the categories of portable spas proposed in section 3 of appendix GG (i.e., "standard spa", "exercise spa", "combination spa", and "inflatable spa") adequately delineate the categories of portable electric spas and whether any additional or different categories are warranted.
- (3) DOE requests comment on whether there are portable electric spas used for special purposes, such as those operated for medical treatment or physical therapy, that should be excluded from the scope of the DOE test procedure or tested in a different manner. If so, DOE requests comment on the method to determine the spas to exclude or test differently.

- (4) DOE requests comment on its tentative determination not to propose a minimum or maximum size to limit the scope of the DOE test procedure.
- (5) DOE requests comment on whether it is necessary to measure standby mode or off mode energy consumption in the DOE test procedure.
- (6) DOE requests comment on its proposal to use standby loss, equivalent to the normalized standby power as defined by ANSI/APSP/ICC-14 2019, as the performance-based metric for representing the energy use of portable electric spas.
- (7) DOE requests comment on its proposed definition for “standby loss” in section 3.9 of appendix GG.
- (8) DOE requests comment and data on the representative operation of spas when in use with the cover removed, including typical frequency and duration of use, operation of jets or other features, and number of users. DOE also requests comment on how usage varies across spa types.
- (9) DOE requests comment on any test methods that measure the operation of spas when in use with the cover removed.
- (10) DOE requests comment on its proposal to adopt specific sections of ANSI/APSP/ICC-14 2019 in DOE’s proposed test procedure for portable electric spas.
- (11) DOE requests comment on whether any of the sections of ANSI/APSP/ICC-14 2019 that DOE is proposing to exclude from the proposed DOE test procedure should be included in the DOE test procedure.
- (12) DOE requests comment on its determination that, rounded to the nearest degree, 56 °F is a nationally representative ambient air temperature applicable to testing portable electric spas.

- (13) DOE requests comment on its proposal to specify an ambient air temperature of 56.0 ± 3.0 °F during testing. If commenters recommend a different ambient temperature, DOE requests data demonstrating the representativeness of that ambient temperature.
- (14) DOE requests comment on its tentative determination that the specifications regarding chamber internal dimensions, air flow, and chamber insulation in appendix A to ANSI/APSP/ICC-14 2019 are appropriate for testing portable electric spas and would produce test results that reflect representative consumer use and would not be unduly burdensome to require for testing.
- (15) DOE requests comment on the proposed chamber requirements in section 4.1.1 of appendix GG and whether any alternate or additional requirements are needed.
- (16) DOE seeks comment on its tentative determination, based on review of portable electric spa user manuals, that the most representative installation of a portable electric spa is to be installed directly on concrete with no insulation between that surface and the spa.
- (17) DOE requests comment on its proposal to specify installing the portable electric spa directly on the chamber floor without any insulation between the spa and the floor.
- (18) DOE seeks comment on its presumption that a consumer would be likely to install insulation and/or wood if insulation and/or wood were to be included with the portable electric spa and specified by the installation instructions to be installed for use, and that in such cases, testing with the insulation and/or wood provided would produce test results that are representative of consumer use.
- (19) DOE requests comment on the availability of concrete floors or slabs within test facilities and on whether any test chamber floor alternatives, such as solid or

perforated steel or aluminum floors, would represent portable electric spa operation when installed on concrete floors or slabs.

(20) DOE requests comment on the proposed hierarchy for specifying voltage and maximum amperage for portable electric spas that have multiple options for voltage and/or amperage. DOE requests comment on any cases for which the proposed language would not make clear the voltage and/or maximum amperage to be used during testing.

(21) DOE requests comment on the proposals to exclude from incorporation by reference the definitions of “fill volume” and “rated volume” in ANSI/APSP/ICC-14 2019, to define a new term for “fill volume,” and to specify new filling instructions in appendix GG.

(22) DOE requests comment on its proposal to specify a tolerance of ± 0.125 inches on the defined fill level.

(23) DOE requests comment on whether any other tolerances on fill level, such as ± 0.0625 inches or ± 0.25 inches would be more appropriate than ± 0.125 inches.

(24) DOE requests comment on its proposal to allow represented values of fill volume to be within 5 gallons of the mean fill volume measured for the sample of the basic model.

(25) DOE requests comment on its proposed requirements for testing a portable electric spa that does not have a cover designated for use by the spa manufacturer.

(26) DOE requests comment on whether manufacturers would ever designate a portable electric spa model to be used without a cover, or designate a “no cover” option. If so, DOE requests comment on how such a spa should be tested to determine the highest standby loss (e.g. should it be tested with a 6 mil plastic cover, or tested with no cover).

- (27) DOE requests comment on the proposal to require that ambient air temperature be measured above the center of the portable electric spa.
- (28) DOE requests comment on its proposed requirement that water temperature settings must not be adjusted between the start of the stabilizing period and the end of the test period.
- (29) DOE requests comment on its proposal to state explicitly that each individual water temperature measurement taken during the stabilization period and test period must meet the applicable water temperature requirements.
- (30) DOE requests comment on the proposed standby loss calculations, including the method used to calculate normalized temperature differences based on the midpoint of the allowable temperature ranges. DOE requests comment on its assertion that normalizing standby loss to the midpoint of the allowable temperature ranges would produce test results that are more representative than normalizing standby loss to the minimum expected temperature difference between the allowable ranges.
- (31) DOE requests comment on the proposed applicability of the definition of “basic model” at 10 CFR 430.2 to portable electric spas.
- (32) DOE requests comment on the proposed statistical sampling procedures and representations requirements for portable electric spas.
- (33) DOE requests comment on the proposal that represented values be based on testing with the designated cover that results in the highest standby loss; or by testing as specified in section 4.1.5.2 of appendix GG to subpart B of part 430 if there is no designated cover.
- (34) DOE requests comment on its estimates of the costs associated with performing testing according to the test procedure proposals in this NOPR. DOE requests

comment on its tentative determination that the proposed DOE test procedure, if finalized, would not be unduly burdensome for manufacturers to conduct.

(35) DOE requests comments on the benefits and burdens of the proposed updates and additions to industry standards referenced in the test procedure for portable electric spas.

(36) DOE requests comment on the number of small businesses DOE identified. DOE also requests comment on the potential cost estimates for each small business identified.

(37) Additionally, DOE welcomes comments on other issues relevant to the conduct of this rulemaking that may not specifically be identified in this document.

VI. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notice of proposed rulemaking and request for comment.

List of Subjects

10 CFR Part 429

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Intergovernmental relations, Reporting and recordkeeping requirements, Small businesses.

10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Small businesses.

Signing Authority

This document of the Department of Energy was signed on October 3, 2022, by Francisco Alejandro Moreno, Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on October 4, 2022.

Treana V. Garrett
Federal Register Liaison Officer,
U.S. Department of Energy

For the reasons stated in the preamble, DOE is proposing to amend parts 429 and 430 of Chapter II of Title 10, Code of Federal Regulations as set forth below:

**PART 429 – CERTIFICATION, COMPLIANCE, AND ENFORCEMENT FOR
CONSUMER PRODUCTS AND COMMERCIAL AND INDUSTRIAL
EQUIPMENT**

1. The authority citation for part 429 continues to read as follows:

Authority: 42 U.S.C. 6291–6317; 28 U.S.C. 2461 note.

2. Section 429.68 is added to read as follows:

§429.68 Portable electric spas.

(a) *Determination of represented values.* Manufacturers must determine the represented values for each basic model of portable electric spas by testing in conjunction with the following provisions.

(1) *Spa Covers.*

(i) If a basic model is distributed in commerce with multiple covers designated by the spa manufacturer for use with the basic model, a manufacturer must determine all represented values for that basic model based on the cover that results in the highest standby loss, except that the manufacturer may choose to identify specific individual combinations of spa and cover as additional basic models.

(ii) If a basic model is distributed in commerce with no cover designated by the spa manufacturer for use with the basic model, a manufacturer must determine all represented values for that basic model by testing as specified in section 4.1.5.2 of appendix GG to subpart B of part 430.

(2) *General sampling requirements.* The sampling requirements of §429.11 are applicable to portable electric spas; and

(3) *Units to be tested.* For each basic model of portable electric spas, a sample of sufficient size must be randomly selected and tested to ensure that any representation of standby loss or other measure of energy consumption of a basic model for which consumers would favor lower values shall be greater than or equal to the higher of:

(i) The mean of the sample, where:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

and \bar{x} is the sample mean, n is the number of samples, and x_i is the i^{th} sample;

Or,

(ii) The upper 95 percent confidence limit (UCL) of the true mean divided by 1.05, where:

$$UCL = \bar{x} + t_{0.95} \left(\frac{s}{\sqrt{n}} \right)$$

and \bar{x} is the sample mean, s is the sample standard deviation, n is the number of samples, and $t_{0.95}$ is the t statistic for a 95 percent one-tailed confidence interval with $n-1$ degrees of freedom (from appendix A to subpart B of this part).

(4) *Standby loss represented value.* The represented value of standby loss must be a whole number of watts.

(5) *Fill volume represented value.* The represented value of fill volume of a basic model must be a whole number of gallons that is within 5 gallons of the mean of the fill volumes measured for the units in the sample selected as described in paragraph (a)(3) of this section.

**PART 430 -- ENERGY CONSERVATION PROGRAM FOR CONSUMER
PRODUCTS**

3. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291-6309; 28 U.S.C. 2461 note.

4. Section 430.3 is amended by:

- a. Redesignating paragraphs (v) through (w) as paragraphs (w) through (x); and
- b. Adding a new paragraph (v).

The addition reads as follows:

§430.3 Materials incorporated by reference.

* * * * *

(v) *PHTA*. Pool & Hot Tub Alliance, 2111 Eisenhower Avenue, Suite 500,
Alexandria, VA 22314, *www.phta.org*.

(1) ANSI/APSP/ICC-14 2019 (“ANSI/APSP/ICC-14 2019”), American National
Standard for Portable Electric Spa Energy Efficiency, IBR approved for appendix GG to
subpart B of this part.

(2) [Reserved]

* * * * *

5. Section 430.23 is amended by adding a new paragraph (hh) to read as follows:

§430.23 Test procedures for the measurement of energy and water consumption.

* * * * *

(hh) *Portable electric spas*.

(1) Measure the standby loss in watts and the fill volume in gallons of a portable
electric spa, in accordance with appendix GG to this subpart.

(2) [Reserved].

6. Add Appendix GG to subpart B of part 430 to read as follows:

Appendix GG to Subpart B of Part 430 - Uniform Test Method for Measuring the Energy Consumption of Portable Electric Spas

Note: Beginning [*date 180 days after date of publication of a final rule in the Federal Register*], all representations of energy efficiency and energy use of portable electric spas, including those made on marketing materials and product labels, must be made in accordance with this test procedure.

1. Incorporation by reference.

DOE incorporated by reference in §430.3, the entire standard for ANSI/APSP/ICC-14 2019. However, only enumerated provisions of ANSI/APSP/ICC-14 2019, as listed in this section 1 are required. To the extent there is a conflict between the terms or provisions of a referenced industry standard and the CFR, the CFR provisions control. Non-enumerated provisions of ANSI/APSP/ICC-14 2019 are specifically excluded.

1.1 ANSI/APSP/ICC-14 2019:

(a) Section 3 – Definitions (excluding the definitions for *cover*, *specified*; *fill volume*; *rated volume*; and *standby mode*), as specified in section 3 of this appendix;

(b) Section 5 - Test Method (excluding Sections 5.1, 5.2, 5.5.2, 5.5.4, 5.5.5, and 5.7), as specified in section 4 of this appendix;

(c) Appendix A - Minimum Chamber Requirements (excluding section titled *Chamber floor*), as specified in section 4.1.1 of this appendix.

1.2 Reserved.

2. Scope

This appendix provides the test procedure for measuring the standby loss in watts and the fill volume in gallons of portable electric spas.

3. Definitions

3.1. Section 3, Definitions, of ANSI/APSP/ICC-14 2019 applies to this test procedure. In case of conflicting terms between ANSI/APSP/ICC-14 2019 and DOE's definitions in this appendix or in §430.2, DOE's definitions take priority.

3.2. Combination spa means a portable electric spa with two separate and distinct reservoirs, where—

(a) One reservoir is an exercise spa;

(b) The second reservoir is a standard spa; and

(c) Each reservoir has an independent water temperature setting control.

3.3. Exercise spa means a variant of a portable electric spa in which the design and construction includes specific features and equipment to produce a water flow intended to allow recreational physical activity including, but not limited to, swimming in place. An exercise spa is also known as a swim spa.

3.4. Exercise spa portion means the reservoir of a combination spa that is an exercise spa.

3.5. Fill volume means the volume of water held by the portable electric spa when it is filled as specified in section 4.1.4 of this appendix.

3.6. Inflatable spa means a portable electric spa where the structure is collapsible and is designed to be filled with air to form the body of the spa.

3.7. Standard spa means a portable electric spa that is not an inflatable spa, an exercise spa, or the exercise spa portion of a combination spa.

3.8. Standard spa portion means the reservoir of a combination spa that is a standard spa.

3.9. Standby loss means the mean normalized power required to operate the portable electric spa in default operation mode with the cover on, as calculated in section 4.3 of this appendix.

4. Test Method

Determine the standby loss in watts and fill volume in gallons for portable electric spas in accordance with Section 5, *Test Method*, of ANSI/APSP/ICC-14 2019, except as follows.

4.1. Test Setup

4.1.1. Chamber

Install the portable electric spa in a chamber satisfying the requirements specified for *Chamber internal dimensions*, *Air flow*, and *Chamber insulation* in appendix A, *Minimum Chamber Requirements*, to ANSI/APSP/ICC-14 2019.

4.1.2. Chamber Floor

Install the portable electric spa directly on a level concrete floor or slab.

If insulation and/or plywood is shipped with the spa, and the manufacturer's instructions specify that insulation and/or plywood be installed under the spa for normal use, install the minimum amount of insulation and/or plywood between the floor and the spa that is specified by the manufacturer's installation instructions. Otherwise, install no insulation or plywood between the floor and the spa.

4.1.3. Electrical Supply Voltage and Amperage Configuration

If the portable electric spa can be installed or configured with multiple options of voltage, maximum amperage, or both, use the option specified in the following paragraphs.

- (a) Use the as-shipped configuration, if such a configuration is provided.
- (b) If no configuration is provided in the as-shipped condition, use the option specified in the manufacturer's instructions as the recommended configuration for normal consumer use.
- (c) If no configuration is provided in the as-shipped condition and the manufacturer's instructions do not provide a recommended configuration for normal consumer use, use the maximum voltage specified in the manufacturer's installation instructions and maximum amperage that the manufacturer's installation instructions specify for use with the maximum voltage.

4.1.4. Fill Volume

Follow the manufacturer's instructions for filling the portable electric spa with water, connecting and/or priming the pump(s), and starting up the spa. After verifying that the spa is operating normally and that all water lines are filled, power off the spa and adjust the fill level as needed to meet the following specifications before starting the test.

If the manufacturer's instructions specify a single fill level, fill to that level with a tolerance of ± 0.125 inches.

If the manufacturer's instructions specify a range of fill levels and not a single fill level, fill to the middle of that range with a tolerance of ± 0.125 inches.

If the manufacturer's instructions do not specify a fill level or range of fill levels, fill to the halfway point between the bottom of the skimmer opening and the top of the skimmer opening with a tolerance of ± 0.125 inches.

If the manufacturer's instructions do not specify a fill level or range of fill levels, and there is no wall skimmer, fill to 6.0 inches ± 0.125 inches below the overflow level of the spa.

Measure the volume of water added to the spa with a water meter while filling the spa. Measure any water removed from the spa using a water meter, graduated container, or scale, each with an accuracy of ± 2 percent of the quantity measured. The fill volume is the volume of water held by the spa when the spa is filled as specified above.

4.1.5. Spa Cover

4.1.5.1. Cover is Designated by the Spa Manufacturer

Install the spa cover following the manufacturer's instructions.

4.1.5.2. No Cover is Designated by the Spa Manufacturer

If no cover is designated by the spa manufacturer for use with the spa, cover the portable electric spa with a single layer of 6 mil thickness (0.006 inches; 0.15 mm) plastic film. Cut the plastic to cover the entire top surface of the spa and extend over the edge of the spa approximately 6 inches below the top surface of the spa. Use fasteners or weights to keep the plastic in place during the test, but do not seal the edges of the plastic to the spa (by using tape, for example).

4.1.6. Ambient Temperature Measurement Location

The ambient air temperature measurement point specified in Section 5.6.3 of ANSI/APSP/ICC-14 2019 must be located above the center of the spa.

4.2. Test Conditions and Conduct

4.2.1. Ambient Air Temperature

Maintain the ambient air temperature at 56.0 ± 3.0 °F for the duration of the test. This requirement applies to each individual ambient air temperature measurement taken for the duration of the stabilization period and test period.

4.2.2. Water Temperature Settings

Adjust the spa water temperature settings to meet the applicable temperature requirements in Section 5.6.1 of ANSI/APSP/ICC-14 2019. The spa water temperature settings must not be adjusted between the start of the stabilizing period specified in Section 5.6.1 of ANSI/APSP/ICC-14 2019 and the end of the test period specified in Section 5.6.4.7 of ANSI/APSP/ICC-14 2019.

4.2.3. Water Temperature Requirements

Each individual water temperature measurement taken during the stabilization period and test period must meet the applicable water temperature requirements specified in Section 5.6.1 of ANSI/APSP/ICC-14 2019.

4.3. Standby Loss Calculation

Calculate standby loss in watts by calculating the measured standby loss using Equation 1 of this appendix, calculating the measured temperature difference using Equation 2 of this appendix, and normalizing the standby loss using Equation 3 of this

appendix. Use the standby loss calculated in Equation 3 as the standby loss value for the test.

Equation 1

$$SL_{meas} = \frac{E}{t}$$

Equation 2

$$\Delta T_{meas} = T_{water\ avg} - T_{air\ avg}$$

Equation 3

$$SL = SL_{meas} \times \frac{\Delta T_{std}}{\Delta T_{meas}}$$

Where:

SL_{meas} = Measured standby loss (watts)

E = Total energy use during the test (watt-hours)

t = Length of test (hours)

ΔT_{meas} = Measured temperature difference (°F)

$T_{water\ avg}$ = Average water temperature during test (°F)

$T_{air\ avg}$ = Average air temperature during test (°F)

SL = Standby loss (W)

ΔT_{std} = Normalized temperature difference (°F), as follows:

46.0 °F for all inflatable spas, standard spas, standard spa portions of a combination spa, exercise spas, and exercise spa portions of a combination spa tested to a minimum water temperature of 100 °F; or

31.0 °F for all exercise spas or exercise spa portions of a combination spa tested to a minimum water temperature of 85 °F.

[FR Doc. 2022-21914 Filed: 10/17/2022 8:45 am; Publication Date: 10/18/2022]